PsyCom

Psychological Testing & Therapy
Home Unit

User's manual

Explore your mind

- Discover your inner strengths and fears
- Put away anxiety and stress
- Find out best ways to relax

Psy151 MODEL USB

ArtMedico
www.artmedico.com

PsyCom

PSY151 v1.84.4

SemiPro

User's Manual

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1. Introduction

Throughout centuries people always wanted to peer into each other's souls and see who we truly are. But the awareness of social demands would prevent us from easily exposing ourselves, as we seem to doubt how grotesque figures we really are from inside.

What really prevents us from exposing our true wishes and fantasies is our cognitive (cortical) brain having the full awareness of how society expects us to behave. On the other side, our drives, urges and instincts, located deep inside the brain, constantly try to get hold of our steering wheel and control our behavior. Out of this struggle for control emerge our actions and who we really are.

Sometimes, these deeply located centers in the brain, controlling our emotions, instincts and drives, tend to surprise even ourselves. Frequently we remain stunned by a though that ran through our mind. We don't know where it came from, or how we were even capable of conceiving it.

However, today it is possible to record certain signals from our body which originate in those deeply located centers that steer our emotions. Now we have a chance to see these signals while we watch pictures with different

contents. By analyzing these signals we can peer into our own mind and reveal our deepest emotions, drives or instincts.

Using this device you will clearly see how inconsistent our emotional brain is. Though we sometimes swear that we will love our partner forever, our brain will not experience that love the same way in the morning as it does in the evening, before and after the sex, before and after the lunch. Our love changes all the time, and all other emotions do so in our ever changing brain. It is a happy chance if we, changing, continue to love the changed person (W. Somerset Maugham).

By using different behavioral techniques we can also learn to control our urges or drives. As Oscar Wild said in The Picture of Dorian Gray, the only way to get rid of a temptation is to yield to it. Resist it, and your soul grows sick with longing for the things it has forbidden to itself. PsyCom will not let you run away, it will help you put your desires into your own hands. By using these special techniques you will learn to command your brain and not be its slave.

2. Psychological Bases

PsyCom principle of evaluation of psychological characteristics by measuring electrodermal activity (EDA) is based on idea to use external stimulation (video/audio contents) and provoke measurable emotional EDA responses. These responses represent a part of our emotional world.

Two scholars William James and Carl Lange during the 19th century independently developed a theory of emotion that today represents one of the cornerstones of modern psychophysiology. Though largely criticized during 20th century, this theory, slightly modified, is supported by plenty of physiological evidence today. The theory says that we have experiences, and as a result, our autonomic nervous system (ANS) creates physiological events such as muscular tension, heart rate increases, perspiration, dryness of the mouth, etc. This theory proposes that emotions happen *as a result* of these changes, rather than being the cause of them. The most important evidence today supporting this theory is the change in emotional experience after the spinal cord injury.

This theory was developed further by Stanley Schachter and Jerome Singer (1962) who performed a study on 184 college students on how emotion comes from a state of arousal to our awareness. This theory, also known as two factor theory of emotion, says that emotion is composed of

two factors – one being the psychological arousal while the other is cognitive knowledge of what caused that arousal. If you see the person you love, you will experience the psychological arousal and along with it you will cognitively know that the arousal was caused by the person you love. Being in love without butterflies in your stomach, or heart beating faster, would not be complete.

PsyCom records the EDA activity which is a direct result of the psychological arousal (key component of every emotion). It, therefore, allows you direct view to the part of your emotional world.

By using PsyCom you can experiment with your psychological responses, learn to control yourself in every situation and get rid of different fears or unpleasant situations that could prevent you from achieving your goals.

PsyCom can be used as standard biofeedback unit (2.3), but it can also be used for your emotional testing (2.1) and therapy (2.2). By performing PsyCom testes you will reveal your personality and introduce yourself more deeply. You can also use PsyCom therapies to try to correct some of your emotional responses. For therapeutic purposes PsyCom uses standard behavioral principles such as conditioning, systemic desensitization, biofeedback, habituation, etc.

2.1. PsyCom Testing

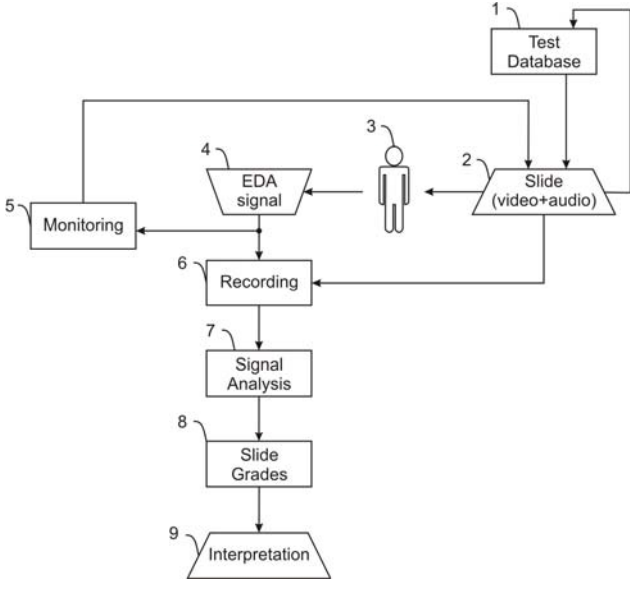

Figure 1. Principle of PsyCom operation

PsyCom testing is based on a new, pending patent protected procedure, which uses physiological signals from the user's body to interpret different emotional characteristics such as jealousy, readiness for marriage, stage fright, love, etc.

The general idea is based on the following principle (Figure 1). The user (3) is presented the series of slides (2) while his/her EDA (electrodermal activity) is being recorded (6). The user will react to different slides differently, and based on these reactions, PsyCom will make conclusions on tested psychological characteristic.

To provide the best possible results, PsyCom continually monitors (5) the EDA signal (4) from the user (3), and selects the best possible moment to present the new slide (2). Since PsyCom will not display the next slide until the proper moment arrives, it may happen that tests last a little longer than described. PsyCom tests usually last around 2 min, but since PsyCom will wait for the best possible moment to present the new slide, it may happen that the will last 3 or sometimes even 4min.

After presenting all the slides and recording the EDA signal, PsyCom makes signal analysis and evaluates each slide independently (8). Based on this evaluation, the final report is composed and presented to the user (9).

Have in mind, that PsyCom records your EDA signal and makes conclusions on the bases of your reactions to different slides. It is in human nature to react differently to the same slide (stimulus) on different occasions. Though it may look strange, the circumstances in your

emotional brain change very rapidly as opposed to your cognitive brain. For instance, when you see a face of an old friend that you have not seen for a long time, your emotional brain will, most likely, initiate a strong emotional response (increase of heart rate, EDA response, increase of blood pressure and decrease of temperature). Your cognitive brain will react differently. It will immediately recall different events and different data from your past. But if you look at the same face after some time (maybe couple of minutes or hours later), your emotional brain will react quite differently. It will either initiate no emotional response, or it will initiate much weaker emotional response than the first time. This happens because emotional brain constantly goes through different habituation and conditioning processes. Habituation is the process in which our brain learns to react less intensely over repeated exposure to certain stimuli, such as face of an old friend.

These processes make the emotional brain very changeable. For this reason, PsyCom will frequently detect quite different reactions to the same video/audio stimulation (slide). Sometimes you will react intensely to the slide suggesting that you deliver the speech in public, while on some other occasion it may happen that emotional (EDA) response will not be generated at all.

The other reason for inconsistency lies in your cognitive brain. When PsyCom presents the certain slide, you start thinking about it. At different occasions, your cognitive brain will make different associations on the same stimulus. Some of these associations will initiate the EDA responses,

while others will not. For example, it may happen that, on seeing the slide with tropical paradise, your cognitive brain starts the contemplation on how relaxing it is to be on the bitch. This thinking will not produce any EDA response and PsyCom will conclude that you are in the process of relaxation. It may also happen that you start the contemplation on how beautiful it would be to go to similar place, but that unfortunately you cannot afford any such trip at the moment. This thinking could produce the EDA response. What your brain will choose to think is largely speculative. But there is a rule which says that your brain will choose to think about topic being of greatest importance to you.

Out of this complicated story, there are simple conclusions:

1. Each time you take the PsyCom probe and try any of the PsyCom tests, you will be able to see your emotional responses at that particular moment.
2. On different occasions, tests could have different results. This is normal. But if any of the tests repeatedly shows the same result and, if that result points to your being anxious about the tested topic, then this could be a strong indicator that the tested topic represents a strong stress initiator in your life. In this case you should try available PsyCom therapies or other methods for relaxation. PsyCom therapies are based on well tested behavioral principles of classical conditioning developed by Russian scientist and Nobel Prize laureate Ivan Pavlov during the 20th century.

2.1.1. Principles of Testing

PsyCom is a device that records the electrodermal activity (EDA). This activity is recorded on standard polygraph tests in police during the crime investigation. Instead of being asked a question and then trying to detect whether the examinee lies or tells the truth, PsyCom uses the principle of presenting different pictures, and analyzing the user's reaction.

EDA is body's direct representative of stress and psychological arousal. The more stress you experience, the greater this activity will be. So, PsyCom is actually trying to find out, which of the slides initiate a stressful response and which do not. The greater the EDA reaction, the more powerful emotion you experience.

Having in mind that emotions are created in our awareness as a result of the operation of the autonomic nervous system, and having in mind that PsyCom records one part of the autonomic nervous system (sympathetic division), it is clear that, using this device, we can gain access to the part of our emotional experience.

As stated in Schachter-Singer theory of emotion, the intensity of every emotion corresponds to the level of psychological arousal, which is actually measured by PsyCom. Second component of every emotion is cognitive and relates to what we think triggered the psychological arousal. While performing the PsyCom testes, we will presume that you think about the contents of the slides presented to you during the testing. The level of psychological arousal, detected by PsyCom while you think about the

presented slide, will tell you how intense your emotions are with respect to the presented slide.

Have in mind that the strongest producer of psychological arousal is the most fundamental of all emotions, and the one that was the first to appear in the evolution. This emotion is fear and a feeling of being endangered in any way. Without this emotion any species would easily be extinguished. Mouse without this emotion would not run from the cat and would easily be eaten. It is also interesting that you could strongly react to song that triggers the emotional response, but the level of reaction to the emotion of love could be surprisingly low unless you are in those days of early love with butterflies in you stomach, sweating and heart beating faster. Early love is passionate and rich in reproductive tonus, which is why the reaction to the loved person is stronger. Over time, emotion of love weakens in its intensity of psychological arousal and EDA reaction. So, it could be very hard to test one's love for person X in advanced love phases. In this case, PsyCom will try to address the emotion of love closer to feelings of possession, confidence and care taking all of which come as a result of the activity of mammillary bodies in our emotional brain. Mammillary bodies are types of love centers in the brain. For this reason, in order to test your love at later love stages, PsyCom will probably present the slide suggesting that the loved person X is either terminally ill or will go away for a long time.

Certain versions of PsyCom software (PsyCom Pro) allow test and therapy editing, making it possible for you to design tests. PsyCom SemiPro

version will let you create simple personal tests, while different tests can always be downloaded from *www.artmedico.com*

2.1.1.1 Difference between General Psychological Tests and PsyCom

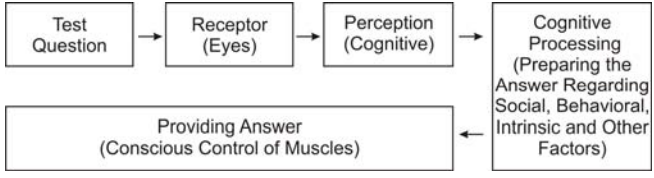
Test Question
Receptor (Eyes)
Perception (Cognitive)
Cognitive Processing (Preparing the Answer Regarding Social, Behavioral, Intrinsic and Other Factors)
Providing Answer (Conscious Control of Muscles)

Figure 2. Classical testing principle

In classical testing, the examinee is presented a certain question which he/she receives with eyes and sends to the cortical (conscious) brain for further analysis. Question is first recognized and understood and then the answer is processed regarding different factors such as social, behavioral, emotional and other factors. The examinee can choose which of the influences will be ignored and which will be accepted, so the answer will surely be colored by the examinee's attempt to satisfy different expectations.

On the other hand, PsyCom principle is based on idea to present video/audio contents to the examinee, whose emotional brain will generate immediate reaction not influenced by our conscious brain. This reaction is not colored by examinee's wishes, social expectations or similar contaminants. The recorded emotion is your pure and uncontaminated thought.

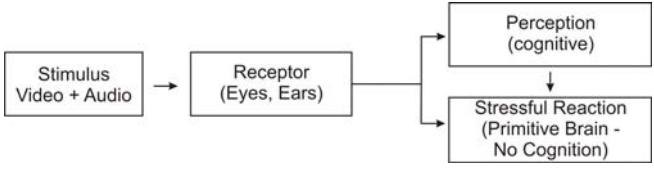

Figure 3. PsyCom testing principle

In PsyCom procedure, the user cannot affect the results of the questions the way user could do in common psychological tests.

On the other side, conscious brain can be more consistent than emotional one. Facts remembered in conscious brain can stay in our memory for a long time. So do the facts remembered in emotional brain, with exception that emotional brain reacts not only on factual basis, but rather on the bases of our urges and drives, our mood, endocrine and neurotransmitter activity, different processes of habituation and conditioning. Due to these reasons, some of our emotional reactions could seem inconsistent. When you see the slide of a person you dislike for the first time, you will probably

develop the reaction. If the nature of your dislike is not so serious, seeing that person for the second time, shortly after, will not cause the reaction. This inconsistency is due to the habituation process that teaches your brain not to react to common stimuli.

2.1.1.2 What is the Psychological Characteristic

Psychological characteristic could be any measurable psychological feature ranging from different emotions such as fear, love, hate, embarrassment, pride, jealousy, to complex characteristics which include several different features such as readiness for marriage or occupational compliance.

2.1.2. Types of tests

PsyCom tests can be designed for non-specific examinee or can be personalized for a specific examinee.

2.1.2.1 Personal Tests

If test designer is familiar with the examinee, or if the user wants to test himself, then the designer could schedule slides and sound effects specifically for the examinee. The designer can use slides with family photos, childhood photos to provoke emotional responses.

In this case photos of people from real life could have much stronger emotional effect than general scenes used in general tests.

To create personal tests in PsyCom PSY151 check the heading: 8. Creating the Personal Tests.

2.1.2.2 General Tests

If test designer creates test for unknown examinee, then it is not possible to put real life photos in the test. Instead, test designers depicts certain life situations or potential phobic objects that are capable to evoke stressful reaction in unknown examinee.

2.1.3. Application

PsyCom testing can successfully be applied in various testing procedures such as psychological personality testing, occupational compliance, sports psychology, criminal investigation, etc. PsyCom is primarily designed for people who would like to experiment on their psychological responses and would like to train themselves to become psychologically stronger. People interested to test their emotional responses to different life situations can use PsyCom Basic Package containing the several basic tests most applicable in everyday life. These tests can be interpreted without having any kind of professional psychological training.

Professional applications of PsyCom would include:

2.1.3.1 Personality Testing

PsyCom allows testing of different psychological characteristics, including different emotions or personality structures. Personality tests can be found in packages supporting personality testing.. Professional personality tests are not included in the PsyCom basic package.

2.1.3.2 Occupational compliance

Different PsyCom tests allow the occupational compliance testing. For instance ability to sustain violent scenes, confidence and no stage fright, whether one could be a successful driver, pilot, police officer, fire fighter, business negotiator, etc. To perform these tests you should first either find packages containing these tests or you can design the tests on your own if you have the PsyCom Pro version.

2.1.3.3 Sport Psychology

Psychological stability plays vital role in professional sport. PsyCom tests could reveal stressful reactions in different critical sport situations and help you clearly determine the psychological status of the examinee.

Tests can further reveal the speed and intensity of your psychological arousal and the level of sympathetic activity which may play critical role in all sports having in mind that this kind of activity makes functional changes in the body preparing it to sustain tremendous effort. For instance, sympathetic activity activates adipose tissue and initiates the lipid brake

down, supply of glycogen, and through the activation of the endocrine system regulate the glucose level in the blood stream and the cell.

For sport testing you should chose adequate tests that are not included in the PsyCom basic package.

2.1.3.4 Criminal Investigation

PsyCom testing can be used as a new criminal investigation technique. In case it is necessary to examine whether suspect took part in the crime (murder, robbery, etc.) or not, then PsyCom testing is used in the following way.

Crime scene investigation unit collects the photos from the crime scene including the potential victim, crime site, weapon, etc. These photos are imported into PsyCom and presented to the suspect along with other similar, irrelevant scenes (irrelevant weapon, irrelevant sites) that are not related to the crime.

When the suspect is presented with the slides (1), his/her brain makes analysis (2) of the received video information and, in case that the scene is not recognized at all, no stressful reaction is initiated (3). In case that the scene from the slide is recognized, then brain proceeds examining whether the recognized scene is related to any stressful event (4) and if it is, the brain initiates the stressful reaction (5) that is immediately detected by PsyCom. It is important to note that the recognition of the scene and its connection to the stressful memory cannot in any way be controlled by the

conscious brain. This means that there is no chance for the suspect to conceal the memories from the crime scene. In case that the scene on the slide is not connected to any stressful event in the memory, it is clear that the brain would not initiate any sympathetic reaction (6).

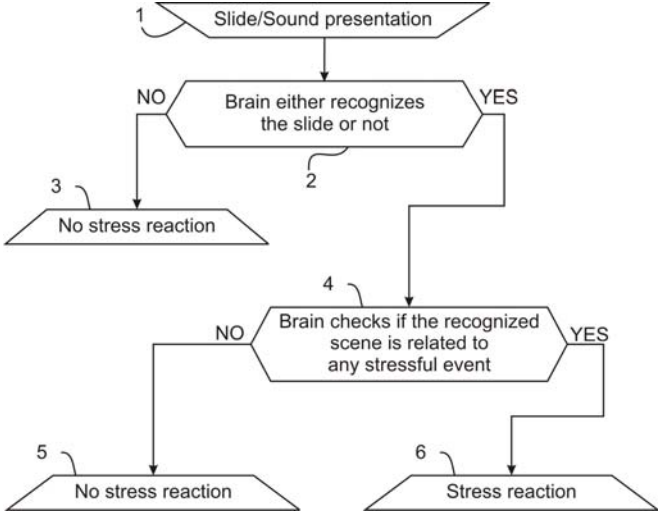

Figure 4. Crime investigation by PsyCom testing

At the end of the test, test score will clearly say whether the suspect took part in the crime or not. The report created by PsyCom will leave no space for subjective misinterpretation of test results.

2.1.4. Tests Available in PsyCom Basic Package

PsyCom tests are designed to provide a glimpse into your emotional world. You will be able to see your emotional reactions to different stimuli and determine the stressful life scenes which could potentially pose a threat to your health.

All PsyCom tests were created for and tested on population between 30-65 years of age. This doesn't mean that younger and older examinees will not be able to take the tests. It may happen, however, that younger population will not be able to understand the slides properly, or it may happen that the experience of the younger population will not be sufficient for these tests.

Check for new tests and therapies on www.artmedico.com

2.1.4.1 Are You Happy With Your Appearance

This test will present different scenes related to the way you look. Having in mind that your appearance may be one of the most important factors in your self-esteem, it would be useful to know how your emotional brain will react to different scenes related to the way you look. During the test you will be exposed to scenes suggesting you to think of your nails, nose, ears,

the way you dress, etc. Painful topics will provoke the reaction. You may be surprised by the results.

- Designed for population: Females, 30-60 years of age
- No of Slides: 14
- Estimated test duration: 2:30s
- Rating: 1-5 (1 means that you are happy with your appearance, while 5 means that you are completely unhappy with your appearance).

2.1.4.2 Are You Ready for Marriage

This test will try to examine your emotional features that are relevant for the successful marriage. If PsyCom finds that you have combination of emotional features ideal for successful marriage you will be given grade 5 which means that you are ideal for successful marriage. On the other side, if you lack all important emotional features related to marriage you will be given grade 1, meaning that you are not ready for the successful marriage. The combination of ideal features would mean that you should love your partner and feel fear on ideas of loosing him/her, but that you should not be jealous. You should be patient and should not be bothered to perform your home duties or taking care of your future children. Have in mind that even though PsyCom reveals that you are not afraid to do you home duties, it doesn't mean that you will actually do them. Brain decision making is a lot more complex than your emotional reaction to a certain slide.

- Designed for population: Males and Females, 30-60 years of age
- No of Slides: 21
- Estimated test duration: 3:30s
- Rating: 1-5 (1 means that you are not ready for successful marriage, while 5 means that you are emotionally prepared to step into successful marriage).

2.1.4.3 Business Fears

Business induced stress is the cause of many ailments, anxiety, immune failure and other health problems. This test evaluates the stress you experience during the exposure to business related scenes. You will be given the greater stress grade if you react to more business related situations and vice versa. Having a high grade here, in repeatedly taken tests, means that there are many aspects of business that can initiate the stress response. This could be dangerous for your health. In this case you should try relevant PsyCom therapies and different techniques of relaxation.

- Designed for population: Males and Females, 30-60 years of age
- No of Slides: 21
- Estimated test duration: 3:30s
- Rating: 1-5 (1 means that your emotional brain does not experience high stress levels induced by different business situations,,

while 5 means that the level of stress initiated by business problems is very high).

2.1.4.4 General Test

This test will display potentially stressful scenes from everyday life. It will test different emotional aspects of your personality. Getting a high grade here means that many life situations could be your stress initiators. This would further mean that you should try to relax more and solve the emotional problems you have.

- Designed for population: Males and Females, 30-60 years of age
- No of Slides: 27
- Estimated test duration: 4:30s
- Rating: 1-5 (1 means that the common stress initiators have little impact on your emotional brain and produce very little amount of stress, while 5 means that daily life is too stressful for you).

2.1.4.5 Jealousy + Envy Test

By presenting different scenes related to jealousy and envy, PsyCom will try to determine how your emotional brain reacts to these scenes. If you have the jealous nature, then your emotional brain will react to these scenes.

Ordinary language tends to conflate envy and jealousy. The philosophical consensus is that these are distinct emotions. While it is linguistically acceptable to say that one is jealous upon hearing that the neighbor bought a new car, it could be plausibly argued that one is feeling envy in such a case. In proper usage, jealousy is the fear of losing something that one possesses to another person (a loved one in the prototypical form), while envy is the pain or frustration caused by another person having something that one does not have oneself.

The author of this test believes that, besides clear distinctions, there also are certain similarities. It seems that the same underlying mechanism governs both emotions. In envy and in jealousy, the locus of concern is the beloved. But in case of envy the beloved is not the person, but is the public opinion and the envious person is the one caring for loosing the affection of the public opinion. When a neighbor buys the new car, public opinion could become more favorable for the neighbor, and that is the fear that causes the emotion of envy.

In case that the person, taking this test, shows more reactions to scenes related to envy then scenes related to jealousy, this only means that such a person is more in love with the public opinion than any person.

The more scenes to which you react, the more points you will collect and be given the higher grade.

- Designed for population: Males and Females, 30-60 years of age
- No of Slides: 12

- Estimated test duration: 2:00s
- Rating: 1-5 (1 means that you do not demonstrate emotional reactions to jealous scenes, while 5 means that jealous scenes initiate strong stressful reactions).

2.1.4.6 Love Test

Estimating one's love is not an easy task. This test will try to do that, but the results can be highly speculative. The starting point in the test design is the idea that a person having the love emotion for someone would have developed the love corresponding emotion related to the fear of loosing the object of love. According to neurobiologists' view, the emotion of love is closely related to activity of the mammillary bodies located in the emotional brain, which also produce the drive to take care about the object of love. Biological drive to take care of someone necessarily develops fearful ideas of loosing the object of love or having it hurt in any way, which is why the examinee will most likely emotionally react to the slides suggesting such possibility. On the other side, high grade in love test would also mean that the examinee shows no reaction to jealousy scenes, because these scenes should not trigger the same emotion.

- Designed for population: Males and Females, 30-60 years of age
- No of Slides: 12
- Estimated test duration: 2:00s

- Rating: 1-5 (1 means that you do not show emotional reactions while thinking about different scenes relevant for love, while 5 means that you are completely in love).

2.1.4.7 Stage Fright

Many people have developed fear of being exposed to the public eye. There are two reasons for which a person may not have the reaction to different scenes related to public performance. One is that such person never encountered any such practice or imagination, while the other is the successful habituation to such experience. If a person never had a thought of delivering a speech in public, then such scene would be meaningless for the examinee and there would be no reaction. On the other side, if the examinee is daily engaged in similar activities without any stressful effects, then such person would be habituated to such practice and would show no signs of stage fright.

- Designed for population: Males and Females, 30-60 years of age
- No of Slides: 13
- Estimated test duration: 2:10s
- Rating: 1-5 (1 means that you don't have stressful reactions to stage fright scenes either because you are not interested or you never thought of taking part in public performance or because you are fully

habituated to such scenes. 5 means that you are terrified with ideas about your public exposition).

2.2. PsyCom Therapy

All PsyCom therapies use scientifically proven psychological approaches to change your emotional brain in order to decrease anxiety, reduce fears, or help you achieve your goals. PsyCom therapies can be found in different PsyCom packages. PsyCom PSY151 offers only beginners therapy procedures that you can use see how they work. To use any of the advanced therapies check the available therapy packages on www.artmedico.com. Main psychological approaches used in PsyCom therapies are

1. Habituation
2. Systematic desensitization
3. Reaction conditioning
4. Biofeedback
5. Chromatherapy

2.2.1. Therapy Principles

2.2.1.1 Habituation

Habituation is the psychological process in which person can experience a decrease in psychological response to a stimulus after repeated exposure to that stimulus over a period of time.

This means that if you react stressfully to the slide of a spider, then repeated exposure to that slide will gradually lessen the level of response until eventually the response disappears completely. Stressful response will not only lessen with regard to the slide of a spider, but will lessen the response to any spider.

In PsyCom therapy module, by selecting the No Effect therapy mode, you will choose the therapy based entirely on habituation effect. In all other cases, therapy will be based on habituation plus the chosen therapy effect such as systematic desensitization, reaction conditioning, biofeedback or chromatherapy.

2.2.1.2 Systematic Desensitization

Systematic desensitization is a type of behavioral therapy used in the field of psychology to help effectively overcome phobias and other anxiety disorders.

In order to apply the systematic desensitization, you must first learn the technique of relaxation. Then you should apply adequate therapies, from the PsyCom therapy module, that utilize this approach.

The main idea with systematic desensitization is gradual exposure of the user to the feared situation or object. While exposed to the slide representing the phobic object or situation, you should try to maintain relaxation. PsyCom therapy utilizing this approach presents less phobic slides first, and then progresses with more and more phobic slides. Along with slides, relaxing music is usually played, helping you to relax more easily.

Systematic desensitization can be applied only if you have the PsyCom package with therapies utilizing this concept. Besides, Reaction conditioning checkbox should most likely be checked during the systematic desensitization procedures.

2.2.1.3 Reaction Conditioning

Reaction conditioning is the coin used to describe a process similar to classical or operant conditioning except in this type of procedure it is the stressful reaction that the object of conditioning. This procedure is based on idea to monitor the state of the examinee and determine the moment when he/she gets excited. At that moment, software removes the previously shown slide and displays the relaxation slide that had already been chosen from the relaxation slides list.

Each time you get excited on any of the displayed slides, the relaxation slide is immediately turned on.

2.2.1.4 Biofeedback

Biofeedback therapy mode in PsyCom therapy module is based on idea to present the therapy slides to the user and simultaneously to show the excitement trend using different colors. Red tones represent the excitement trend, yellow tones represent neutral trend, while green tones represent relaxation trend.

By watching the slide simultaneously with the biofeedback color, you can learn to control your reactions.

2.2.1.5 Chromatherapy

It is well known that different colors could stimulate different types of behavior. Green tones are relaxing while red tones of color are exciting. While watching slides you can select the color that you can use for chromatherapy purposes. If you want to relax during the slide presentation select green or blue color, or any other color that you find the most relaxing.

2.2.2. Therapies Available in PsyCom Basic Package

PsyCom therapies are designed for people between 30-60 years of age.

The following therapies are available in PsyCom basic package

Check for new tests and therapies on www.artmedico.com .

2.2.2.1 Business Fears Therapy

Business induced stress is the cause of many ailments, anxiety, immune failure and other health problems. By watching and thinking about the presented slides, while applying any of available therapy modes (9.4), your brain will learn to react with less intensity to the shown slides. Each time you complete the therapy, you will be able to analyze the stress grades you received for each slide and to compare your total score. By repeating the therapy you will probably manage to get total score as low as possible.

Perform therapy each day, 3 times with 20-30min. pause. This means that the complete therapy will last from 01:00 – 1:30 min.

- Designed for population: Males and Females, 30-60 years of age
- No of Slides: 24
- Estimated duration: 6:00s
- Rating: 1-5 (1 means that your emotional brain does not experience high stress levels induced by different business situations,, while 5 means that the level of stress initiated by business problems is very high).

2.2.2.2 Jealousy + Envy Therapy

If you would like to decrease the reaction of your emotional brain to jealousy related scenes, then you could try this therapy. PsyCom will present you different scenes related to jealousy. Try different therapy modes offered by PsyCom (9.4) and choose the one that you believe is the most fitting for you. Each time you complete the therapy, you will be able to analyze the stress grades you received for each slide and to compare your total score. By repeating the therapy you will probably manage to get total score as low as possible.

Perform therapy each day, 3 times with 20-30min. pause. This means that the complete therapy will last from 01:00 – 1:30 min.

- Designed for population: Males and Females, 30-60 years of age
- No of Slides: 9
- Estimated duration: 2:15s
- Rating: 1-5 (1 means that you do not demonstrate emotional reactions to jealous scenes, while 5 means that jealous scenes initiate strong stressful reactions).

2.2.2.3 Stage Fright Therapy

Many people have developed fear of being exposed to the public eye. Reactions to the ideas of performing in public are generated if the person has the actual performing experience or has the experience of imagining

how it would be to perform in front of other people's eyes. In both cases, one would react to the thoughts of public performance. In order to decrease that reaction, one would have to habituate or to be conditioned to these ideas. During the habituation process your brain will learn to react with less intensity to the ideas of public performance. During the conditioning (reaction conditioning is one of the available therapy modes explained in 9.4), your brain will learn that each time the emotional reaction occurs, a slide with the relaxing content will be presented, which would actually tell your brain to relax each time the stressful contents appear.

Each time you complete the therapy, you will be able to analyze the stress grades you received for each slide and to compare your total score. By repeating the therapy you will probably manage to get total score as low as possible.

Perform therapy each day, 3 times with 20-30min. pause. This means that the complete therapy will last from 01:00 – 1:30 min.

- Designed for population: Males and Females, 30-60 years of age
- No of Slides: 14
- Estimated duration: 3:30s
- Rating: 1-5 (1 means that you fully enjoy and feel no anxiety while you are on the spotlight, while 5 means that you are terrified with ideas about your public exposition).

2.3. Biofeedback

Biofeedback procedure is designed to help you gain control over your mind and manage your reactions in every situation. PsyCom records your subconscious activity based on work of autonomic nervous system. You cannot consciously control this kind of activity, which is the reason for making it unique interpreter of your most intimate feelings.

This activity is presented on the graph, while Smiley and Cat can tell you whether you are in the trend of relaxation or excitement. Smiley tells you what you momentary stress trend is, while cat will interpret your global psychological state during the session.

If you want to learn to control your mind, it is necessary to recognize the early, for a man imperceptible, signs of relaxation or excitement. These hidden signs of psychological reactions are not readily observable. In order for them to become visible, it is necessary to use a device capable to register them in early stage and present them on the screen. Biofeedback module is specially designed for this purpose. PsyCom records the brain activity that represents the early sign of stress or relaxation. By following these early signs, you can learn to control reactions.

3. Physiological Bases

While you are presented with different slides, PsyCom measures your electrodermal activity (EDA) that comes as a result of different electrical phenomena in the skin. The most important of them is the activity of the sweat glands, but there also is the activity of vasoconstrictor muscles as well as the activity of Arrector Pili muscle (muscle that raises your hair). EDA is directly correlated to your level of psychological arousal, stress and the sympathetic tonus of the autonomic nervous system. Sympathetic activity is the unique interpreter of the part of your emotional world. Emotion is complex cognitive perception of the state of different parts of the nervous system. These parts of the nervous system would include both the cortical/cognitive parts as well as deeper parts of the brain and the autonomic nervous system (ANS).

Today, one of the most acceptable theories of emotion known as two factor theory, or Singer-Schachter theory, would say that emotion is composed of two parts – one being the cognitive knowledge of what we think about, while the other is the state of psychological arousal and range of internal body changes that accompany the thought. In other words, when we see something or think about something, it may happen that such thought be connected to a certain emotion, in which case our brain will initiate the

psychological arousal and, through the work of our autonomic nervous system (ANS), change the state of our body, by increasing/decreasing heart rate, blood pressure, sweating, breathing, gastro-intestinal movements, reproductive tonus, etc. Psychological arousal and these body changes, along with the cognitive thinking, are all constituent parts of emotions. Once that the brain has recognized emotional thought or stimulus, it would start the process of psychological arousal and activate the ANS. ANS sends signals to the body over the sympathetic and parasympathetic branches. When the body is brought to the new state, body receptors would inform the brain about this change and the brain would feel this difference which we recognize as emotion. When we see someone we love, our brain, over the ANS, informs our heart to beat faster and our gastro intestinal tract to create butterflies in our stomach. The love emotion, therefore, will not be only a thought, but would also include this beautiful feeling of our heart beating faster and the feeling of butterflies in our stomach.

Having in mind that the sympathetic activity, measured by PsyCom, is one of the most important branches in creating emotional content, then it is clear that by measuring the tonus of this branch, it is possible to calculate the level of certain emotions.

3.1.1. Autonomic Nervous System

Autonomic nervous system (ANS) is a part of the nerve system that is used to control different body functions that are not in control of the conscious

brain – hence the name autonomic. ANS controls the heart rate, breathing, gastro-intestinal functioning, endocrine glands, sweat glands and other visceral body systems. ANS has two divisions – sympathetic and parasympathetic. Sympathetic is usually used to excite while parasympathetic is used to relax. Heart is accelerated through sympathetic division, but it can be decelerated through a parasympathetic division.

PsyCom measures the electrodermal activity which is developed as a result of sympathetic activity of the ANS.

3.1.1.1 Emotional Centers in the Brain

As shown on Figure 5, centers involved in emotional control are mainly located deep in the brain. As opposed to cortical regions (superficial regions or brain cortex) that take part in your awareness and conscious decision making, emotional centers are located in spinal cord, brain stem, diencephalons, amygdala, hippocampus, and other centrally located regions of the brain. These subcortical and subconscious centers control our emotions. They also control our drives and urges.

For this reason, when cortical brain or conscious brain gets certain idea, either through a process of contemplation or through some kind of external stimuli (PsyCom slides), it may recognize these thoughts as emotionally charged and then send them to subcortical centers (deep brain structures) to evoke sympathetic reaction. At this point PsyCom detects the psychological arousal and stressful reaction. After the sympathetic reaction

occurs, whole range of visceral (internal organs of the body) changes take place (heart rate, butterflies in stomach, sweating, etc.). When these changes happen, body informs the brain about them and we are capable to feel the emotion.

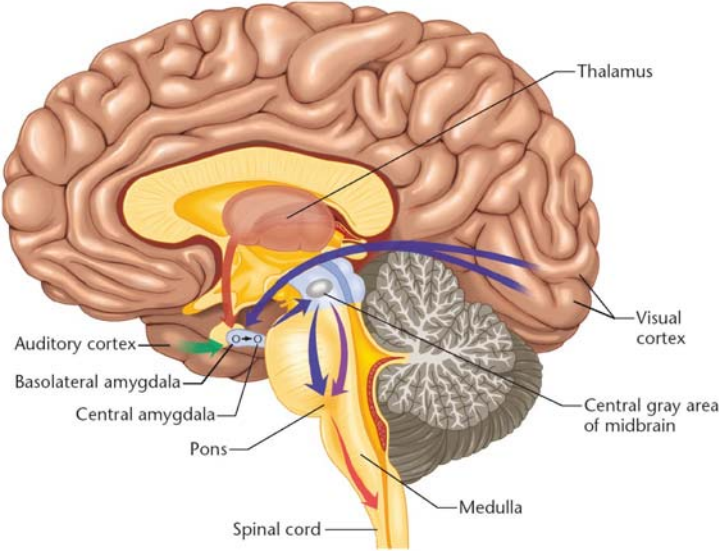

Figure 5. Emotional centers in the brain

For instance if you see the person you love, then your cortical brain plays role in recognition of that person and association with different information related to that person (name, past events, meaning of that person in your life). But simultaneously with conscious processing, the unconscious one is also going on. Deeper brain structures evolved in emotional processing will also receive information about the object of interest (the person you love). If these emotional centers conclude that the person is related to any emotional feeling, then they will initiate reactions that will change your body and prepare it for the encounter with the person you love. They will raise your attention level and initiate a whole range of internal body changes such as increase in your heart rate, butterflies in your stomach, sweating and the increase in reproductive tonus. This complete change of your body, starting with the recognition of the person, to internal body changes, is actually the emotion of love.

3.1.2. Electrodermal Activity

Electrodermal activity (Figure 6) comprises several different actions initiated by the sympathetic branch of the autonomic nervous system. These include:

- Arrector Pili muscle contraction (raises our hair)
- Activation of sweat glands
- Vasoconstriction (increases our blood pressure)

- Release of neuropeptides (alterations in sensory feelings, decrease of pain, etc.)
- Adipose tissue activation (lipid brake down to facilitate energy production and prepare you to run or fight)

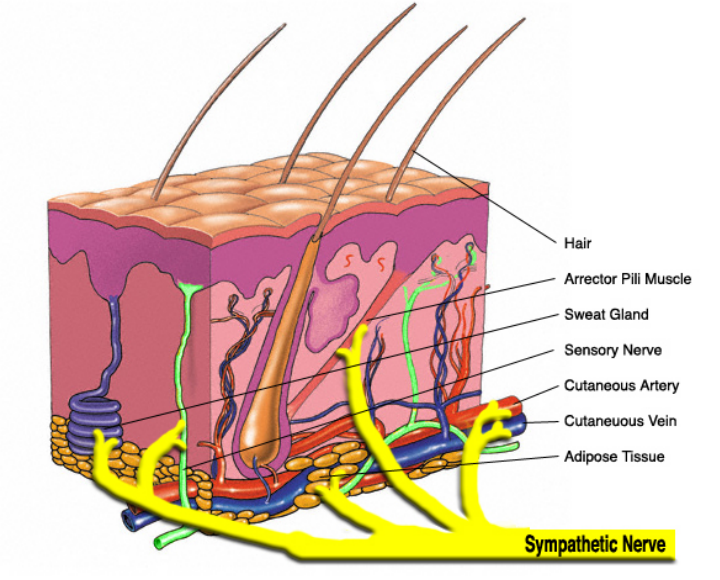

Figure 6. Electrodermal activity

3.1.3. PsyCom Y axis

Even though electrodermal activity (EDA) comprises different phenomena that take place in the skin, this term is usually used to express activity of the sweat glands whose sweat production changes the skin conductance which is measured and analyzed by PsyCom. Since PsyCom uses the probe which gets in contact with the hand of the user, and since the contact surface depends on the size of user's hands and the pressure on the probe, the absolute measures would be meaningless in this case.

Y axis on PsyCom graph uses non-dimensional units expressing the level of psychological arousal and stress. The lower the number, the less conductive your skin is and vice versa. The greater the number on Y axis, the more conductive your skin is and the more stress you experience.

Maximal value on Y axis is 1000. If your level of conductance comes to this point, you should try to wash your hands and carefully dry them. Conductance levels exceeding 1000 would not be reliable for measurement which is why PsyCom would not display any readings exceeding this value.

3.1.4. What Triggers the Reaction

The sympathetic reaction can be triggered by various types of stimuli. Different reasons for the initiation of the sympathetic reaction are further explained.

3.1.4.1 Psychological Arousal

Psychological arousal is the process in which individual transits from the low to high attention level. This process increases the individual's ability to react to external or internal stimuli and is accompanied by sympathetic reaction which can immediately be detected with the PsyCom. Psychological arousal occurs on different types of stimulation. It will happen any time you recognize an object of interest. The more interested you are in the recognized object or life situation, the more intense arousal will be. For this reason, if you see the object of love, or object of fear, or object related to potential financial gain, your brain will raise the attention level and initiate the reaction of psychological arousal.

3.1.4.2 Emotional Response

Emotional response is closely related to reaction of psychological arousal, since arousal is constituent part of any emotion. Each time you feel an emotion, you go through a process of psychological arousal with greater or lesser intensity. The strongest emotional reactions appear as a result of fear or feeling of being endangered. The emotion of love would provoke sympathetic reaction only if the emotion is on a very high level. But in most cases, people will not produce sympathetic reaction when person they love is shown to them. This may happen because we, as a species, don't seem to produce so intense reactions to this emotion. In order to augment the reaction related to love, PsyCom tests could implement the idea of provoking other emotion that is corresponding to the emotion of love but is

also related to the feeling of being endangered. Corresponding to love and related to the feeling of being endangered is the feeling of loosing the object of love. In other words, while you develop the emotion of love for a certain person or object, you simultaneously develop a feeling of possession for that object, because you want it only for yourself. Sometime, in order to test the emotion of love, it is useful to test the emotion that develops when you contemplate the idea of loosing the person or object of love.

3.1.4.3 Muscular Movement

Movement of muscles can trigger the sympathetic reaction. If, during the recording, the examinee starts to move arms or legs, stands up or sits down, the sympathetic reaction would be recorded and would contaminate the testing, therapy or biofeedback results. This also is related to talking and deep breathing. The examinee should be instructed not to make any significant moves.

3.1.4.4 Intense Sensation

Intense sensation such as intense light, sound, intense or painful tactile sensation could also elicit the stressful response.

3.1.5. Neural Pathways and Latency

Depending on the neural pathway, the signal has to travel since the video/audio stimulation to the onset of sympathetic response. There are two different types of neuronal pathways.

3.1.5.1 Short Pathway

Short neural pathway is taken in case that video/audio stimulation reaches the receptors in eyes or ears and then, after the recognition in cortical brain areas, the signal is sent directly to the deeper brain emotional centers to initiate the stressful reaction.

This kind of neural pathway is short and would produce reaction in 1.5 to 3.5s since the recognition of the slide.

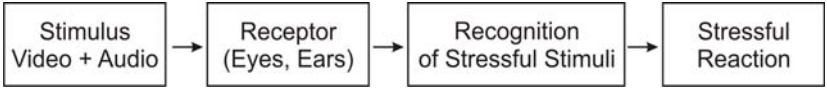

Figure 7. Short neuronal pathway from visual/sound stimulus to sympathetic reaction

3.1.5.2 Long Pathway

Long neural pathway is taken in case that video/audio stimulation reaches the receptors in eyes or ears and then sent to sensory cortical areas where it is not recognized as directly threatening or emotionally charged in any

way. The slide suggests the examinee to start thinking about its contents. If, during the contemplation, a thought emerges that can be recognized as emotionally charged, the signal will be sent to subcortical emotional centers to initiate the stressful response.

This pathway would produce the reaction after the 3s period since the display of the slide. The biggest chance for appearance of the reaction passing the long neural pathway is 3-8s after the display of the slide. For this reason slides in PsyCom testing are usually set to last for 10s. After the period of 10s, it is largely speculative what the examinee will think about, so we will not be certain if the reaction appearing after 10s is caused by the slide contents or by something else.

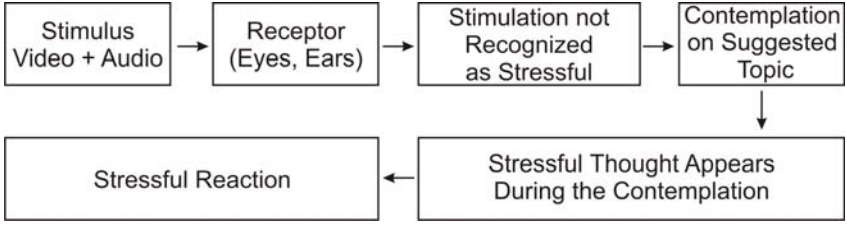

Figure 8. Long neuronal pathway from visual/sound stimulus to sympathetic reaction

3.2. Physiological Parameters of the Reaction

After the presentation of slide/sound to the examinee, the recorded signal looks as in Figure 9. This signal can be analyzed and different parameters can be determined in order to evaluate the signal. These parameters can be classified into two groups:

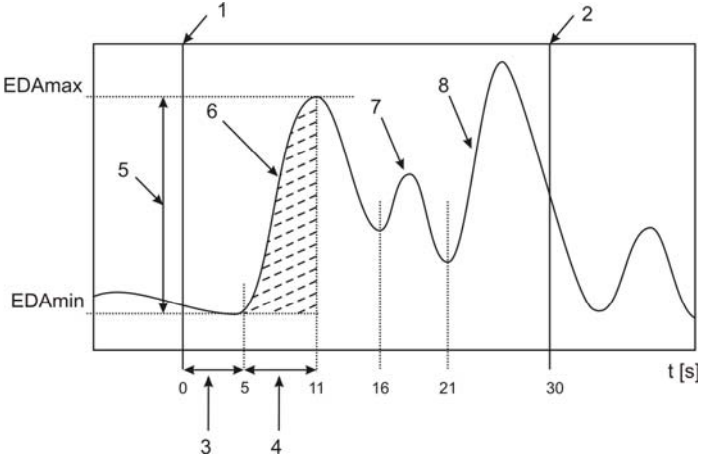

Figure 9. EDA signal parameters

- Reaction type parameters
- Reaction intensity parameters

3.2.1. Reaction Type Parameters

These parameters are used to evaluate the reaction qualitatively. Depending on their values the examiner can conclude whether the reaction passed through short or long neural pathway and whether the contents of video/audio stimulation evoked one or more reactions.

3.2.1.1 Latency

Latency (3, Figure 9) is the time elapsed between the moment the slide/sound is presented (1) to the examinee and the moment of sympathetic reaction (5s after the display). Depending on this parameter it is possible to conclude what type of neuronal pathway was taken by the signal.

Short pathways are present in different types of phobia reactions, in direct recognition of object or situation that is related to stressful event. Short reactions usually have latencies between 1.5 and 3.5 s.

Long pathways are present if the slide/sound stimulated the user to contemplate on a certain topic and, as a result of that contemplation, stressful thought initiated the reaction. Long pathways usually have latencies of more than 3s.

3.2.1.2 Number of Reactions

Figure 9 shows 3 reactions (6, 7, 8) all of which occurred after 4s period. This means that the slide is not direct source of reaction, but that, during the contemplation, the examinee came across at least 3 thoughts each of which initiated the response.

This type of reaction is usually seen as a response to slides suggesting the examinee to think about the family. When the examinee starts to imagine the family members sequentially, some of the family members will elicit the reaction while some will not.

3.2.2. Reaction Intensity Parameters

For quantitative evaluation of the reaction, two sets of parameters are used - absolute and relative parameters. Absolute parameters include amplitude, duration, slope and area. These parameters cannot easily be used in evaluation of the intensity of the reaction since they demonstrate significant variation in different measurements.

The only usable parameter of the mentioned absolute parameters is duration.

Relative parameters actually compare the measured value with the certain reference and evaluate it as percentage of the reference value. All relative parameters can successfully be used in reaction evaluation.

3.2.2.1 Absolute Intensity Parameters

Absolute parameters are displayed in the software to allow the user the insight into measured values, but are not useful in the process of evaluation.

3.2.2.1.1 Amplitude

Amplitude (5, Figure 9) shows the difference between the EDA activity before the beginning of the reaction (EDAmin) and the EDA activity level at the end of the reaction (EDAmax).

Though the amplitude shows the intensity of the reaction, it cannot be used for the evaluation purposes since there are no reference values to compare it with. Instead of absolute value of amplitude, you should use the relative amplitude value – amplitude percent (3.2.2.2).

3.2.2.1.2 Duration

Duration (4, Figure 9) is the time between the beginning of the reaction (5s) until the end of the reaction (11s). In the example (Figure 9) duration of the reaction is 6s.

Duration is the only absolute parameter that can be used for evaluation purposes, since there are reference points to compare it with.

It is well known that human organism is capable to adapt or habituate to different situations. The same is the case with stressful reaction. It lasts until the organism habituates to it. Usually stronger arousal reactions need more time for habituation and vice versa.

The following table shows the reaction duration and its description.

No	Duration	Description
1.	<7s	Short lasting reactions. Short amount of time is necessary to habituate to the stimuli.
2.	7-14s	Medium reaction duration.
3.	14-21s	Long reaction duration
4.	>21s	Very long reaction duration

Figure 10. Reaction duration

3.2.2.1.3 Slope

Slope of EDA signal (6, Figure 9) shows how fast the EDA activity rises. The greater the slope value, the steeper the reaction curve, or the faster the development of stressful response.

Slope is absolute value that cannot easily be compared with any reference values. Instead use the relative parameter – slope percent (3.2.2.2).

3.2.2.1.4 Area

Area of reaction is represented with hatched area on the Figure 9. The area of the reaction depends on all mentioned absolute parameters: amplitude, slope and duration of the reaction. Generally, the greater the area, the greater the stress response.

Since area does not have any reference points you should use the relative parameter – area percent (3.2.2.2).

3.2.2.2 Relative Intensity Parameters

Relative parameters show how stressful the reaction is on any particular slide in comparison with the most stressful reaction in the test. Amplitude percent, slope percent and area percent are calculated for each slide in the test as a percentage in comparison with maximum value of these parameters in the test. Therefore, amplitude percent in any particular slide is calculated as percentage in comparison with the maximum amplitude of all slides in the test.

Relative parameters percent of relaxation time, percent of neutral time and percent of excitation time, calculate the corresponding percentages of time in comparison with the total slide duration.

For all relative parameters, the reaction intensity will be evaluated with the following grades in comparison with the value of the relative parameter.

No.	Percent range	Grade	Description
1.	0-5%	1	No stressful reaction.
2.	5-10%	2	Very small stressful reaction.
3.	10-20%	3	Medium stressful reaction.
4.	20-40%	4	High stressful reaction.
5.	>40%	5	Very high stressful reaction.

Figure 11. Evaluation of relative intensity parameters

3.2.2.3 Relative time parameters

Relative time parameters percent of relaxation time, percent of neutral time and percent of excitation time, calculate the corresponding percentages of time in comparison with the total slide duration. As shown in Figure 12 total slide duration is t1+t2+t3+t4+t5. Absolute excitation time is t1+t5, absolute neutral time is t2+t4, while absolute relaxation time is t3.

Relative excitation time is the percentage of absolute excitation time t1+t5 in comparison with the total slide duration t1+t2+t3+t4+t5.

$$\textit{Relative excitation time} = \frac{t1 + t5}{t1 + t2 + t3 + t4 + t5} \cdot 100$$

Relative neutral time and relative relaxation time are calculated accordingly.

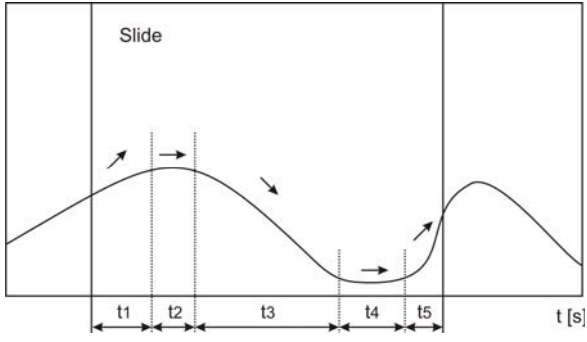

Figure 12. Relative time parameters

For all relative parameters, the reaction intensity will be evaluated with the following grades in comparison with the value of the relative parameter.

No.	Percent range	Grade	Description
1.	0-5%	1	No stressful reaction.
2.	5-10%	2	Very small stressful reaction.
3.	10-20%	3	Medium stressful reaction.
4.	20-40%	4	High stressful reaction.
5.	>40%	5	Very high stressful reaction.

Figure 13. Evaluation of relative time parameters

4. Installing the PsyCom PSY151

4.1. Installing the PsyCom Hardware

- Connect the PsyCom probe to any available USB port of your PC.
- PC recognizes the PsyCom device and installs it on Windows.
- Hardware installation is now complete.

Figure 14. Hardware installation

4.2. Installing the PsyCom Software

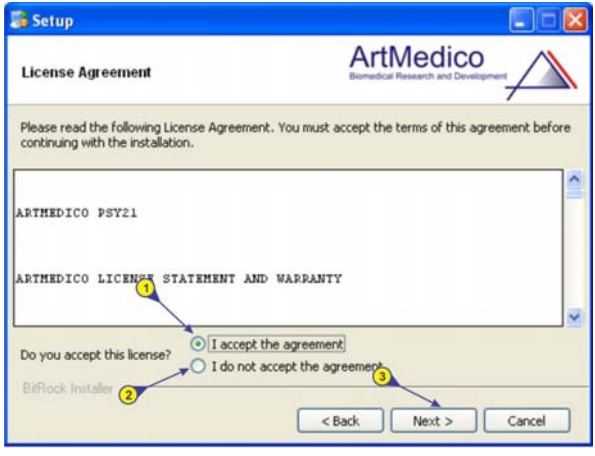

Figure 15. License agreement

- Insert the PsyCom CD. The installation software will automatically be activated.
- If installation software is not activated automatically, you can start it manually by double clicking the file Setup.exe from your CD.

- During the installation you have to complete the following two steps:

  - Read the license agreement (Figure 15) and if you accept it, check the I accept the agreement box (1). Otherwise, check the I don't accept the agreement box (2). After checking one of the boxes, click the Next button (3).
  - Specify the folder where PsyCom will be installed, or just accept the default value and press the Next button.

- After completing these steps, PsyCom software will be installed on your computer. You can always activate the software using the PsyCom icon from your desktop.

4.3. Registration

Visit our web page at www.artmedico.com and register your PsyCom. After the registration you will be able to download different tests, therapies and new software versions.

5. Getting Started with PsyCom

5.1. Checking if PsyCom works OK

- Activate the PsyCom software (double click on PsyCom icon on your desktop).
- If PsyCom probe (3) is connected to USB port, PC recognizes the PsyCom device and displays PsyCom PSY50 on USB list (4).

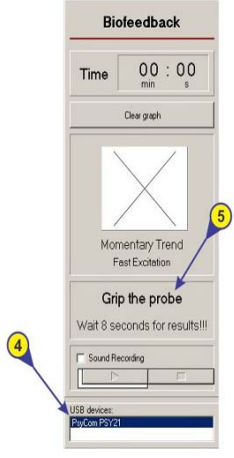

Figure 16. USB devices list

- When PsyCom software is started, by default it is in Biofeedback module

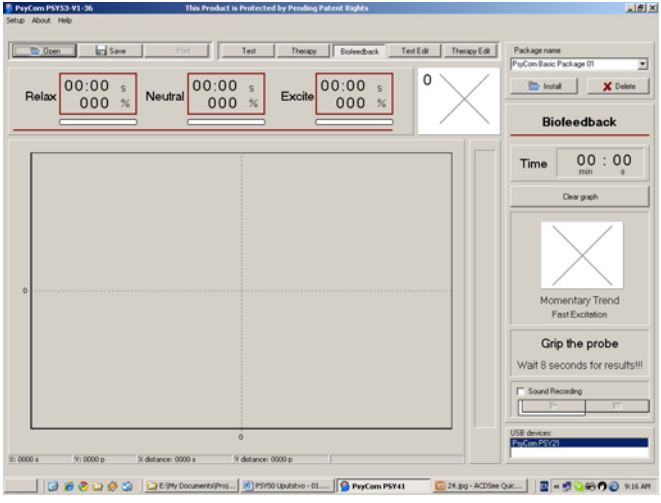

Figure 17. Biofeedback mode

- Grip the probe as shown on the picture. PsyCom will immediately start EDA measurement and will draw the graph of your EDA activity.

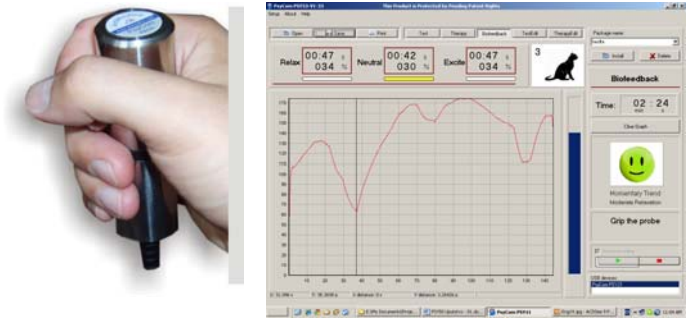

Figure 18. EDA activity in Biofeedback mode

5.2. PsyCom Software Modules

PsyCom PSY151 is designed for psychological testing and therapy utilizing, for the first time, pending patent protected procedure for evaluation of psychological characteristics by measuring physiological signals.

PsyCom PSY151 - SemiPro software offers 3 different modules supporting:

1. Testing of different psychological characteristics (1).

2. Therapy based on principles of habituation, reaction conditioning, biofeedback and chromatherapy (2).
3. Biofeedback procedure (3).

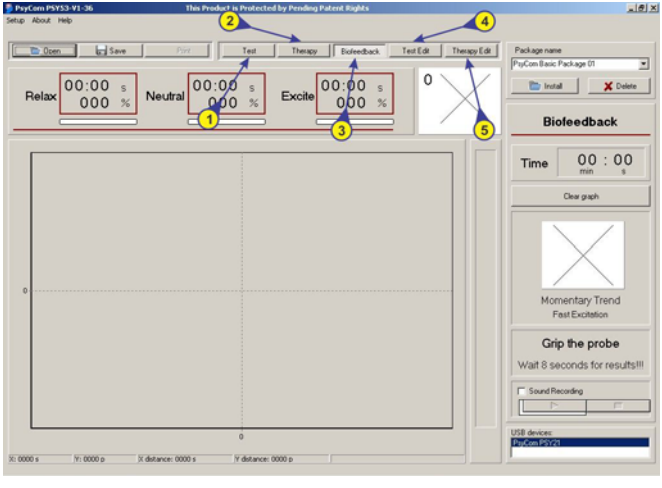

Figure 19. Software modules. Test Edit and Therapy Edit modules are supported only by PsyCom PSY251 - Pro version.

PsyCom PSY251 – Pro version supports additional two modules:

4. Design of tests (4) allowing you to create different PsyCom tests used to evaluate different psychological characteristics.
5. Design of therapies (5) allowing you to create different PsyCom therapies that can be used in different treatment procedures in Therapy module.

6. PsyCom Packages

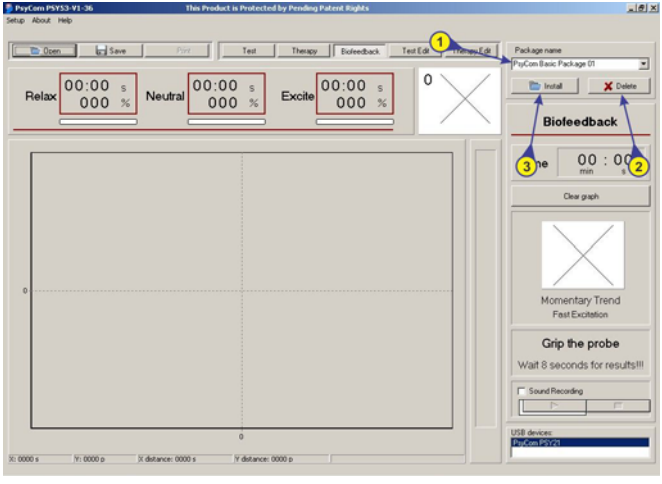

Figure 20. PsyCom packages

PsyCom Package contains a number of slides along with sound effects, different tests and therapies. Packages with different names can be created by all users of PsyCom – PSY251 - Pro. PsyCom Packages can then circulate through Internet allowing other users to install and use various packages. Different packages are used to group different types of slides, tests and therapies.

Package panel in PsyCom software allows you to see the currently active package shown in combo box (1), to change the package by selecting it in combo box (1), install the new package (3) and delete the package from the combo box (2).

6.1. Choosing the PsyCom Package

To select the new package click on the arrow (1, Figure 21) and then select the new package (2). When you select the package from the combo box, software will load new slides, tests and therapies supported by the new package.

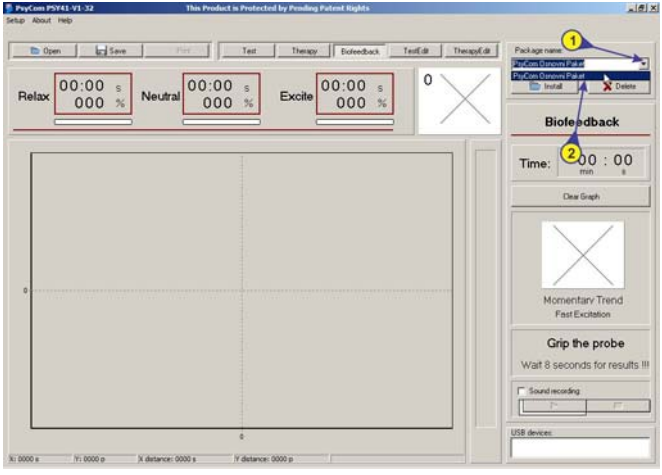

Figure 21. Choosing the PsyCom package

6.2. Package Installation

Once that you get a new PsyCom package on your computer, you can easily install it using the following procedure:

6. Click on the Install button in the Package panel.

7. File dialog will appear on the screen and let you find the new package on your computer. Using the folder box (1) select the folder of the new package.
8. Select the file with the name „PackageActivationFile.pck“ (2) and click the Open button (3).

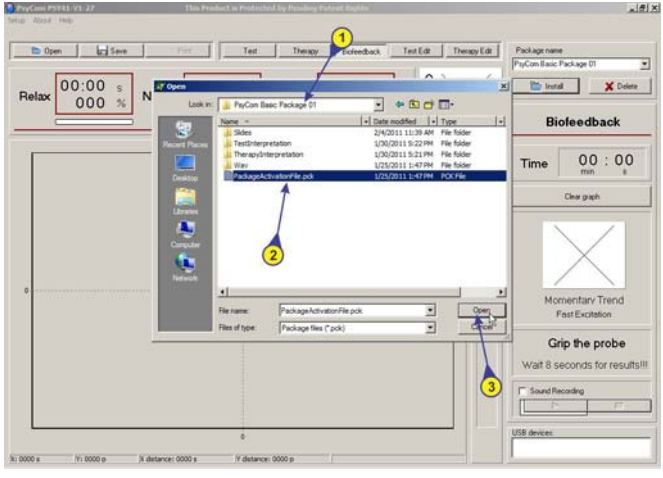

Figure 22. Package installation

The other way to install the package is from Windows Explorer to double click the file „PackageActivationFile.pck“ in the package you want to

install. After either of these procedures is completed, the new package is installed in your PsyCom and can always be selected from the Package combo box.

6.3. *Deleting the Package*

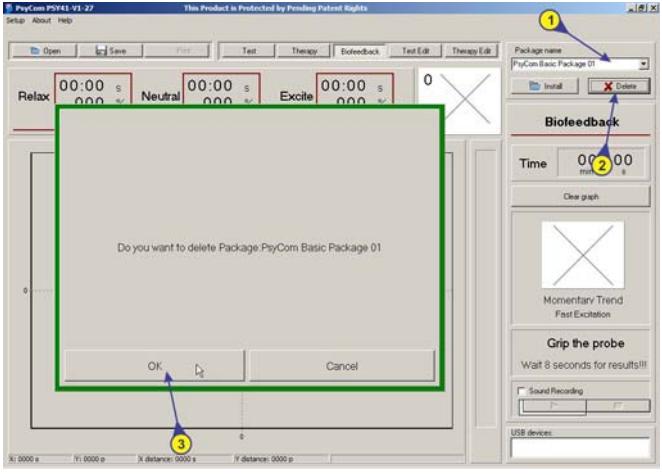

Figure 23. Deleting the package

If you don’t want to use any of the packages from the Package combo box (1), select the package and press the Delete button (2). The dialog will appear with the warning that the selected package will be deleted. If you want to delete the package, press the OK button (3). If you don’t want to delete the package press the cancel button.

7. Psychological Testing

Psychological testing is based on the principle of evaluation of the psychological characteristics by analyzing your EDA responses to different slides relevant for the tested psychological characteristic. The user is presented with the series of slides while EDA responses are continually being recorded. Based on these responses, the user is evaluated on chosen psychological features.

Using the PsyCom tests, user can be evaluated on features such as love, hate, readiness for marriage, stage fright etc. Have in mind that test results may alter depending on the psychological state of the user. Our responses to the same slide change on different occasions. Though it may look strange, our brain changes very fast. It habituates itself quite quickly, but it also forgets the learned lessons very rapidly. Though our conscious brain can keep information for a long time, and though we consciously know something, our emotional brain works quite differently. It is well known that even though we have the information in our conscious brain that a lot

of food could damage our health, our emotional brain initiates the feeling of being hungry and a drive to eat. Even though we are consciously aware that the object of our sexual desire has another partner and that it would be dangerous to engage in such a relationship, our emotional brain drives us to something that is consciously undesirable.

Before you start the test, the examinee should take comfortable position and hold the PsyCom probe in the hand. Once the test is started, series of slides is displayed to the examinee who should try to concentrate and imagine the suggested situation as realistically as possible. The better the imagination, the better the results will be.

While working with PsyCom please have in mind the following:

- The results of the tests may vary since emotional brain would react differently at different occasions.
- Test results may alter depending on the psychological state of the user. Sometimes you are sleepy, sometimes you are angry, while sometimes you are more or less attentive. These different moods will affect your emotional reaction.
- Test results offered by PsyCom are based on just a glimpse on your emotional world and should not be taken for granted as any kind of guide for any of the decisions you make.
- Your emotions are just a part of your thinking process while brain's decisions will always be based on a number of other factors.

- Some people do not have EDA reactions. For this reason the test results could be improper.

7.1. Test Module Description

Test module can be activated by pressing the button Test (1) from the module selection panel. What you can see on the screen in this module includes:

- List of available tests (2).
- Test parameters selection panel (3).
- Start/Stop button (4) used to activate or stop the test.
- Test monitor displaying information on current slide number (5), total number of slides (6) in the test, duration of the current slide (7) and duration of the whole test (8).
- Instruction panel (9) contains the instructions on what the examinee should do at any given moment.
- Picture panel (10) displays the introduction picture (1) when the test is selected. This picture shortly describes the test. Once that you start the test, using the Start button (4), slides will also be displayed in this panel.

After the test completion and display of the test results, you can either save or print the results of the test using the buttons in file management panel (11).

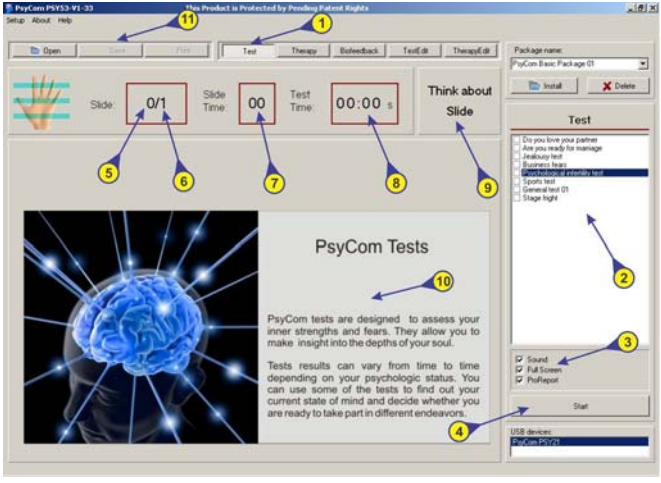

Figure 24. Test module

7.2. Choosing the Test

Test list (1, Figure 25) contains the names of all available tests. On selection of any test, description picture (2) will shortly explain the test. If you choose to take the selected test, place yourself in a comfortable position and press the Start button (3).

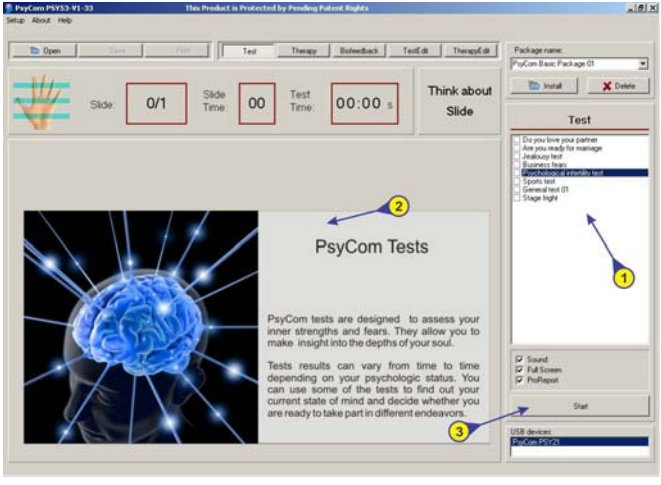

Figure 25. Choosing the test

7.3. Selection of Test Parameters

Test parameters selection panel (1, Figure 26) allows you to:

1. Switch on/off the sound (2). Some of the slides have sound effects which may be necessary for test to function normally. If, for any

reason, you wish to disable the sound, you can do so by unchecking this checkbox.

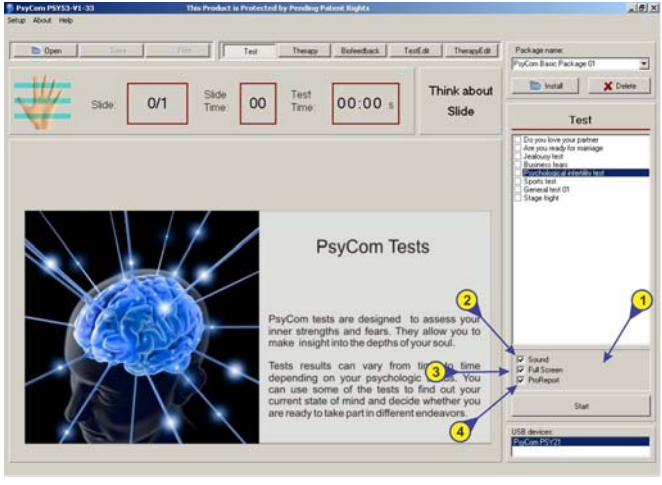
PsyCom PSY53-V1-33
This Product is Protected by Pending Patent Rights
Setup About Help
Open Save Print Test Therapy Biofeedback TestEdit TherapyEdit
Slide: 0/1
Slide Time: 00
Test Time: 00:00 s
Think about Slide
Package name:
PsyCom Basic Package 01
Install Delete
Test
Do you love your partner
Are you ready for marriage
Jealousy test
Business fears
Psychological infertility test
Sports test
General test 01
Stage fright
PsyCom Tests
PsyCom tests are designed to assess your inner strengths and fears. They allow you to make insight into the depths of your soul.
Tests results can vary from time to time depending on your psychologic state. You can use some of the tests to find out your current state of mind and decide whether you are ready to take part in different endeavors.
Sound
Full Screen
PreReport
Start
USB devices:
PsyCom PSY21
1
2
3
4

Figure 26. Selection of test parameters

2. Choose to display the test slides on full screen (3). If this checkbox is checked, during the test slides will be displayed on the full screen.

3. PsyCom PSY152 Semi pro version of software displays the results only in professional format and does not have the Pro report checkbox (4).

7.4. Starting the Test

When you choose the test (1) and select all the test parameters (2), you can start the test procedure by pressing the Start button (3). At any given moment during the test, you can press the same button again to stop the testing.

During the test you should try to concentrate on slides and imagine situations presented by slides as realistically as possible. In the beginning you should note the total test duration (4) and be prepared to concentrate during the specified amount time.

Before you start the PsyCom testing you should do the following:

1. Take the comfortable position in your chair. You should be alone in the room and be able to concentrate to the PsyCom slides.
2. In the Test Module (Figure 27), choose the test (1)
3. Note the total test duration (4) and be prepared to stay concentrated during the specified amount of time. PsyCom tests usually last for about 2 min. Have in mind that PsyCom evaluates your EDA looking for the best moment to display the next slide, so it may

happen that the test actually lasts a little longer then specified in the test duration (4), especially if you are in a more excited mood.

4. Take the PsyCom probe in your hand.
5. When you are ready, press the START button (3, Figure 27).

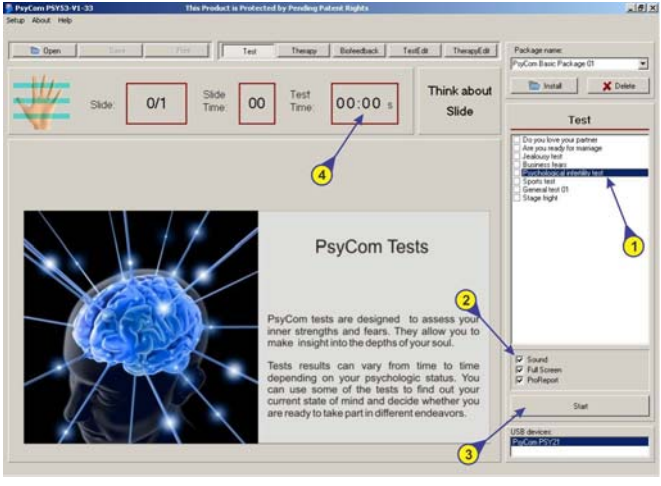

Figure 27. Starting the test

6. During the testing, you should not make any moves with your hands, arms, legs, head, or any other part of your body. You shouldn't talk or laugh. Muscle moves could alter the PsyCom results.
7. Sometimes it may seem to you that the slide is displayed too long on the screen and you may find this annoying, but have in mind that during the testing, PsyCom monitors your psychological activity and will not let the next slide while you are in excitation trend. This procedure is very important, because otherwise software will not be able to conclude what caused the reaction. So, be patient, the next slide will appear as soon as you manage to relax.
8. During the testing, the level of attention tends to decrease, which is why you shouldn't perform more than 1-2 tests at one occasion. A pause of at least 1-3h must lapse between two consecutive tests. Some people can perform many tests at once, while others do not have the capacity to do more than 1-2 tests at a time.

7.5. Test Results

Once the test is completed, the results will be displayed.

9. Test report (1, Figure 29) with interpretation of test results. **To zoom the test report** click the left mouse button on the picture (1)

with report. **To zoom out**, click the left mouse button over the picture again.

10. **Switching between slides.** Data chart (5, Figure 29) is divided with vertical green lines that show the beginning and end of each slide. Whenever you click with left mouse button on any of the chart divisions, the corresponding slide will be displayed (6), while test results (2, 3, 4) will change their values according to the selected slide.
11. If you hold the right mouse button and move the mouse over the chart area (5), you can **scroll the chart**.
12. To **zoom in** the chart, hold the left mouse button at the upper left corner and drag the mouse to the lower right corner of the window you want to zoom.
13. To **zoom out** the chart, hold the left mouse button at the lower right corner and drag the mouse to the upper left corner.
14. If you want to **preview all results**, refer to heading Print Preview 7.6.1.

7.5.1. Interpretation of the Results

The overall evaluation of each slide (6) is presented with the cat (4). Cats have the following meaning:

15. X (0) means that the slide is not evaluated. This situation happens when the software is not able to estimate the stress grade, mainly in case that the reaction started before the moment the slide is displayed or in case that the amplitude of the reaction is too small.
16. Cat 1 (1) stress grade means that during the slide, complete relaxation was detected.
17. Cat 2 (2) stress grade means that during the slide user was mainly relaxed with only minor excitement characteristics.
18. Cat 3 (3) stress grade represents medium level of excitement – or normal state.
19. Cat 4 (4) stress grade means that the examinee demonstrated a stressful response during the slide.
20. Cat 5 (5) stress grade represents high level of stress during the slide.

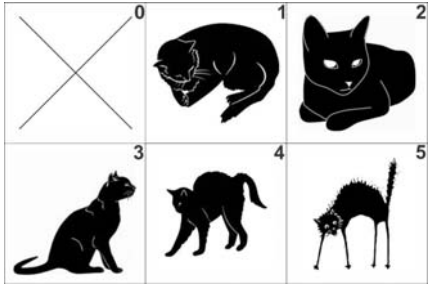

Figure 28. Cat stress grades

Using the cat stress grades you can clearly see what topics excite you and what topics relax you.

Besides the test interpretation (1) and cat stress grades (4), each of the slides is accompanied with the number of parameters (2,3) that describe the physiological responses more closely.

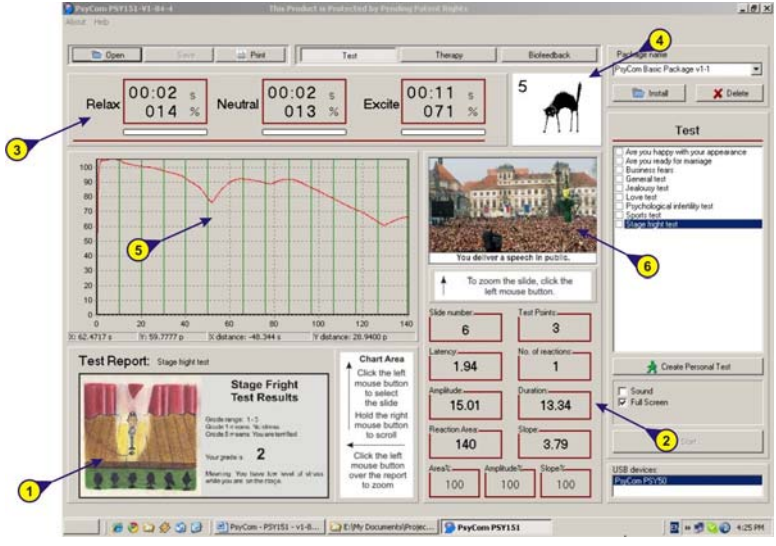

Figure 29. Test results

Test results include:

- Latency — Represents the time elapsed from the onset of slide to the first recorded reaction. In certain cases software can report negative latency which means that the reaction started before the slide is displayed. In that case, negative latency represents the time of the reaction start before the onset of the slide.
- No. of Reactions — Shows the number of different reactions that took part during the slide. This number implies the number of thoughts that elicited the stressful reaction.
- Amplitude — Shows the amplitude of the first reaction that follows the onset of the slide.
- Duration — Shows the duration of the first reaction that follows the onset of the slide.
- Reaction Area — Represents the reaction area of the graph. This parameter correlates to

	both the amplitude and duration of the first reaction.
• Slope	Shows the gradient of the stress line. The higher this value the steeper the onset of the stressful reaction.
• Area%	Shows percentage of the 1st reaction area comparing to the largest reaction area in all slides.
• Amplitude%	Shows percentage of the 1st reaction amplitude comparing to the highest reaction amplitude in all slides.
• Slope%	Shows percentage of the 1st reaction slope comparing to the steepest reaction slope in all slides.
• Relax time	Relax time (3) shows the time the examinee spent in relaxation during the presentation of the selected slide. Relaxation time is expressed in seconds and as percentage of the Relax time comparing to the slide duration
• Neutral time	Neutral time (3) shows the time the examinee spent in neutral trend during the presentation of the selected slide. Neutral time is expressed in seconds

	and as percentage of the Neutral time comparing the slide duration.
• Excite time	Excite time (3) shows the time the examinee spent in excitement trend during the presentation of the selected slide. Excite time is expressed in seconds and as percentage of the Excite time comparing the slide duration.

7.5.2. Understanding the Test Results

To properly interpret the test results, you must have in mind the following:

1. PsyCom records the EDA activity which is directly correlated to your level of psychological arousal and stress. This activity is measured by standard polygraphs used by police during the crime investigation. PsyCom shows the level of stress you experience during different slides. Based on this activity, PsyCom evaluates different psychological characteristics.
2. The result of the test is related to your current psychological state. Have in mind that emotional brain is not as consistent as the cognitive brain. At different times you can be in different mood which will strongly affect your emotional reactions. You can be sleepy, nervous, alert, absent, and depending on your mood, your brain will react differently to the same stimulus (slide), just as your

brain will react emotionally different in different occasions. If you are in love with a person X, it is not every time that your brain will react emotionally the same. Your reactions to the person you love will be significantly different after not seeing him/her for a long time, before and after sexual intercourse, in the morning and in the evening, if you are sleepy and take any sedatives, or if you are nervous and angry. PsyCom will only show you the way you react to different slides at the moment of testing. It will not make any predictions on your average reactions. Knowing this, have in mind that we can clearly conclude that the level of our love is not the same for the same person at all times. It simply changes all the time.

3. When you see certain slide, you usually experience the process of habituation, meaning that your organism learns to react with less intensity to the content of the slide. If you see the same slide again after a short time, you most likely will not react to the slide, or your reaction will be much lower simply because your emotional brain went through a process of habituation.
4. If you note that certain slides, in repeatedly taken tests, always or almost always produce stressful reaction (bristled cat), than be aware of the fact that the situations presented by these slides could be serious stress initiators in your life. These situations could be detrimental for your health.

7.6. Preview the Report

Once the results are displayed you can choose to preview or print them by pressing the Preview button (1). On pressing this button, print preview will be activated.

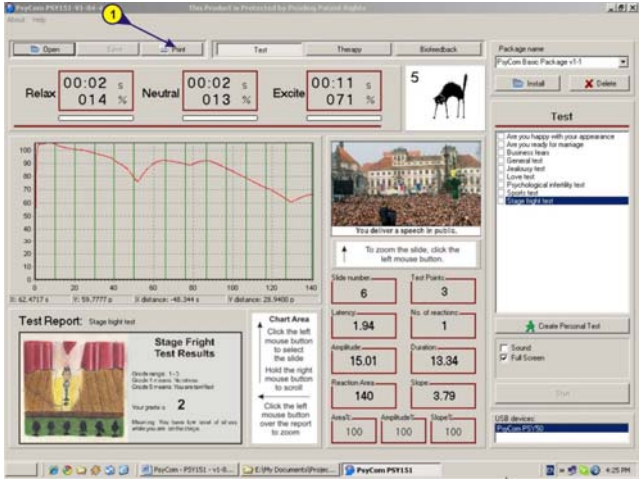

Figure 30. Test report

7.6.1. Print Preview

Note that print preview usually has several pages (not only one). To move between pages use the arrow buttons (2, 3, Figure 31).

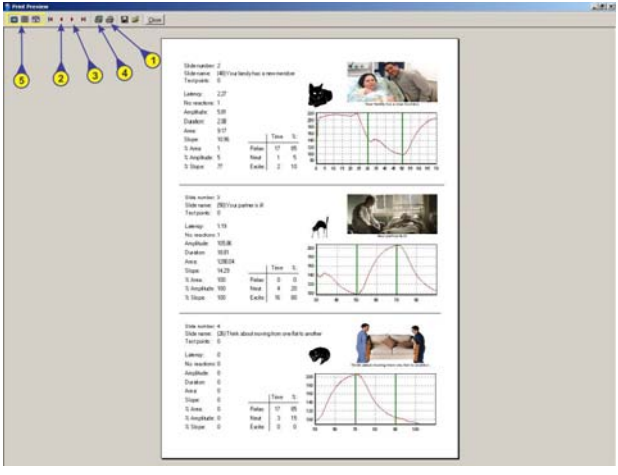

Figure 31. Print preview

- If you want to print the report press the print button (1).
- If you want to go to either next or previous page, press the buttons (2, 3).

- To setup the printer, press button (4). To zoom the report, press any of buttons (5).

7.7. Save the Test Results

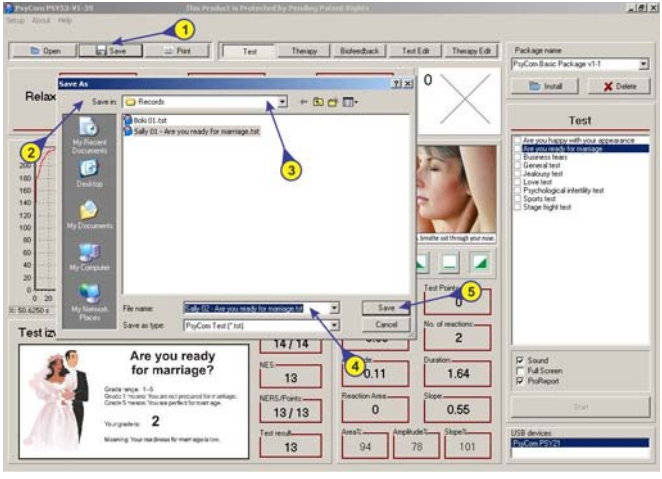

Figure 32. Saving the test results

When the testing is completed and test results are on the screen, you may choose to save them. If, at this point, you switch to another program module, you will loose all test data. Before switching to another program module, you should first save the test results by pressing the Save button (1). You will be displayed the save dialog (2) which lets you specify the folder (3) and file name (4) in which you want to save the test results. Default extension for test files is ".tst". After defining the folder and file name, press the Save button (5).

7.8. Open the Previously Saved Test Results

Previously saved test results can be opened by pressing the Open button (1). Open dialog (2) will be displayed allowing you to specify the folder (3) and test file name (4) from which to open the test results. After specifying the file, press the Open button (5).

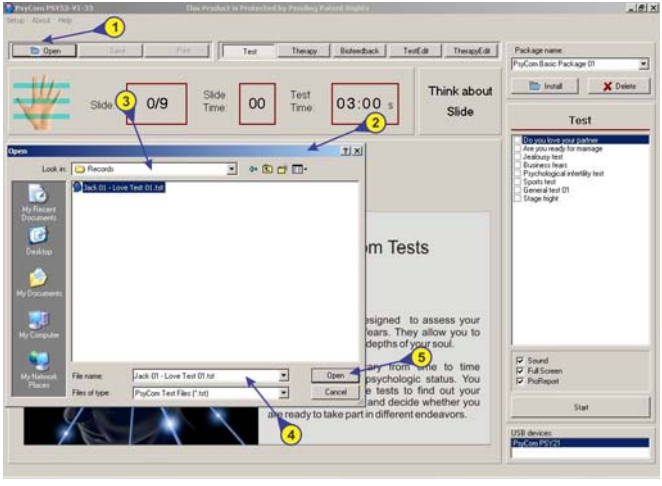

Figure 33. Open the test results

8. Creating the Personal Tests

Creating and using the personal tests could be the most interesting aspect of PsyCom application. We are always interested to know what our subconsciousness thinks of different people that surround us – our friends, family members or business associates.

No doubt we are fully aware of different psychological traits our friends or acquaintances have, no doubt we can describe their vices or virtuous, but each time we see and recognize anyone, deep emotional centers in the brain trigger certain reaction. This reaction cannot be controlled by our conscious brain and that is why we call it subconscious reaction.

Since PsyCom records the EDA signal which is directly correlated to the activity of the sympathetic nervous system, this means that PsyCom will detect our brain's reaction only to those people with sufficient emotional charge stored in our brain. People whom you don't like, who make you nervous, who pose a threat of any kind, people with whom you have the unresolved issues would certainly elicit the reaction.

This version of PsyCom (SemiPro) supports simplified method of test design. If you outgrow this way for designing the tests, PsyCom Pro is

your next step. PsyCom SemiPro personal tests design goes in following steps:

1. Decide what type of test you want to create and, according to the type of the test, make the list of slides you want to present during the PsyCom testing.
   - There are different types of personal tests: test of friends, family test, professional orientation test, etc. On different types of personal tests consult heading 8.3.
   - If you want to create the family test which could show your brain reactions to different family members, you should create the list of slides including for instance: mother, father, brother, sister, uncle, and so on. Each of the family members should be on separate slide.
2. Create the slides.
3. Import the slides to PsyCom and your personal test is ready.

8.1. Creating the Slides

1. According to the test you want to create, select or create the adequate slides (photos) for the test. All slides (pictures) should be in .jpg format and should not be larger than 300kB while their resolution should not be greater than 1200x600. The resolution can be smaller. If you have larger slides (larger photos of your family

members), you can use applications like CorelDraw, Adobe Photo Shop, ACDSee or similar to decrease the size of the photo.

2. When creating slides for the PsyCom test, have in mind that slides in PsyCom will be stretched to resolution of 1200x600 points. So, in order to retain the aspect ratio of the slides, you should create .jpg files with 2:1 ratio. All slides created with different aspect ratios will be stretched to feet the area of 1200x600 points.
3. Place all your slides (.jpg images) in a new folder (1, Figure 34).
4. Since it is important to arrange slides in certain order, it is useful to name slides with numbers starting with 1.jpg, 2.jpg, 3.jpg, and so on, according to the order of appearance of the slides (1, Figure 34).
5. The first slide (1.jpg) should be the relaxation slide (river, mountain, clouds, or similar). This slide will not be shown on PsyCom results. Its purpose is to prepare you for the testing.
6. All other slides, 2.jpg, 3.jpg, and so on, should be the photos of persons to whose appearance you will test your brain reaction. For this reason, if you create family test, place just one of the family members on the slide, so that you be able to see your brain reaction only to that family member. If the photo contains more than one family member, then your brain reaction will be related to both members of the family. If you want to create test that will reveal your brain reaction to your friends, place one friend at each slide (2.jpg, 3.jpg, ...)

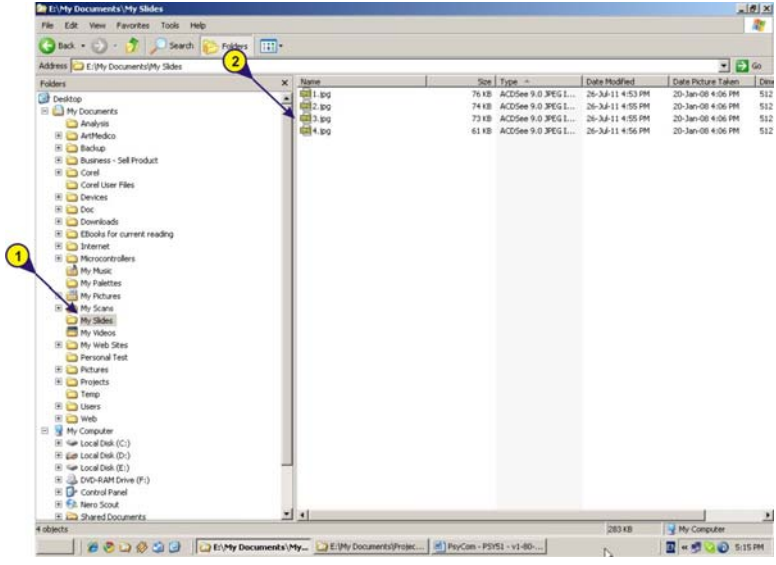

Figure 34. Putting the slides in a new folder

8.2. Importing the slides to PsyCom

To create the personal test you should:

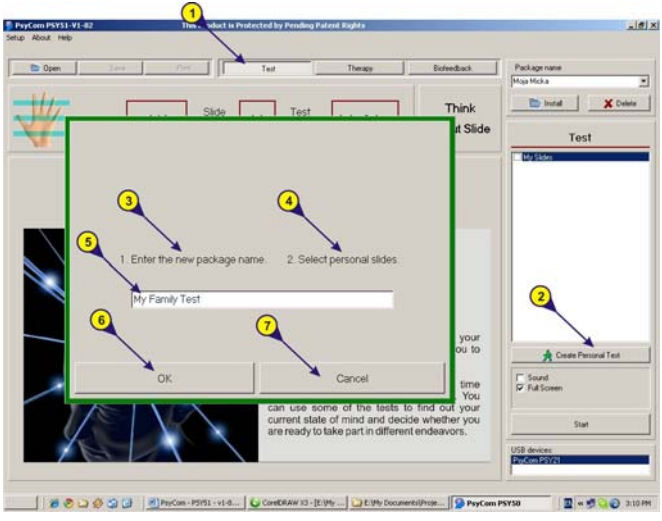

Figure 35. Importing of slides – step 1

1. Go to the Test module (1, Figure 35) of PsyCom
2. Click the „Create personal test“ button (2)

3. The dialog window will appear showing you the next two steps you should make (3, 4).

*8.2.1.1 **Step 1***

1. In the first step specify the name of the new package (5).
   - Each personal test is memorized as a new package.
   - In this step you specify the name of the new package in the edit field (5).
2. After specifying the package name, press the OK button (6), if you wish to go on with the creation of the personal test.
3. If you want to cancel the process, press the Cancel button (7).

*8.2.1.2 **Step 2***

1. After pressing the OK button (6), the Open file dialog will appear (Figure 36) letting you specify the slides you wish to.
2. In a file type combo box specify the .jpg extension.
3. Select the folder with your slides (1, Figure 36)
4. Press the Ctrl+A to select all the files in the selected folder.

5. If you don't want to select all the files, but want to select the range of displayed .jpg files, use the Shift key + left mouse button to specify the range of files in a shown folder
6. Use the Ctrl key + left mouse button to select single files from the shown folder (2)

7. The edit field (5) will show all the slides that will be imported in the selected order.

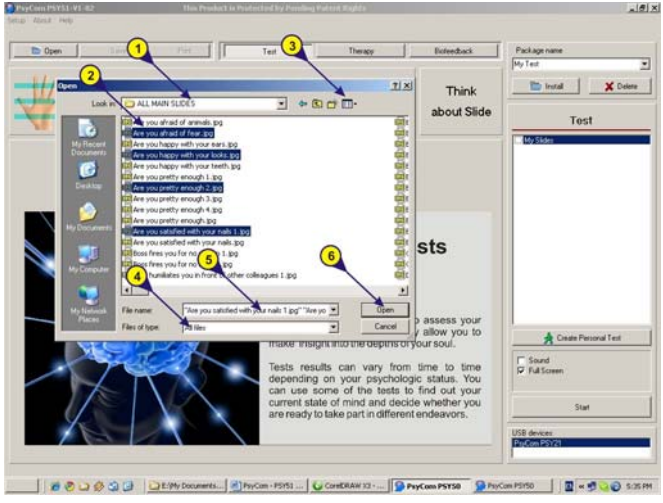

Figure 36. Importing of slides – step 2

8. If it is easier for you to select slides as thumbnails, press the icon (3), and select the Thumbnail option to be able to see the slides you select.
9. After selecting .jpg files press the Open button (6).

8.2.2. Sound Effects

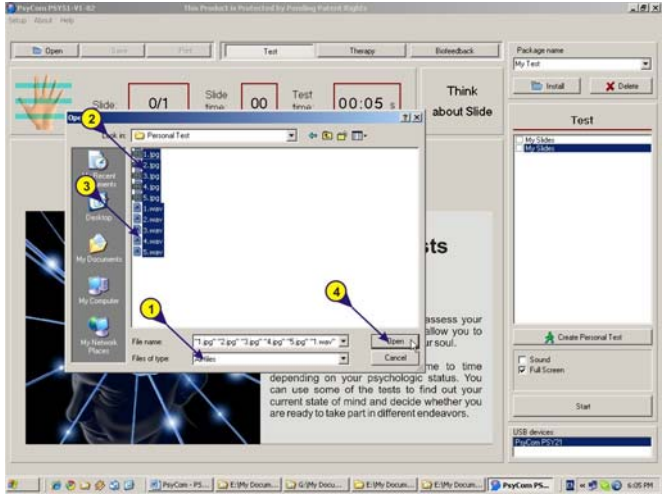

Figure 37. Selecting slides with sound effects

If you want your slides in the test to have certain sound effects (relaxing music, the voice or characteristic sound produced by the person or object in the slide), than you can add the .wav files to the folder from which you import the slides to the personal test.

1. Create .wav files for the slides that you want to have the sound effect. WAV files are sound files obtained either by voice recording, or as a result of conversion from other sound file types such as .mp3.
2. Place all the .wav files in your slide folder.
3. The slide to which you wish to attach the sound file must have the same name as the .jpg file but with .wav extension.
   - If you wish to attach a .wav file to slide 5.jpg, than you should name the sound file 5.wav.
4. When all the .jpg slides and .wav sound files are properly named and placed in one folder (e.g. C:\My Slides), then you can start to create you personal test with slides and sounds.
5. Use the same procedure as described in 8.2 step 1 and step 2.
6. If, during the step 2 (8.2.1.2) you select all the files in the folder (Ctrl+A), and if among these files are both the .jpg and .wav files, then PsyCom will create the test with 5 slides (.jpg files) that will be accompanied with 5 sound effects stored in the corresponding .wav files.

8.3. *Types of Personal Tests*

Using the PsyCom SemiPro simplified method of test design you can create different tests for personal purposes. If you don't want to create new tests, or simply want something new, you can always go to www.artmedico.com to download all available tests and therapies.

People are, most frequently, interested to know how would their brain react to their friends or family members. Young people who are about to choose their profession or people who are about to choose the sport, would be interested what their subconscious reaction to different professions or sports would be.

8.3.1. Family Members

If you want to see your subconscious reaction to your family members, then you should follow this idea:

1. Collect the photos of all the friends you want to include in the test.
2. Prepare the slides according to 8.1
3. While creating the order of slides, have in mind the following:
   - Slide number 1 (1.jpg) should be a relaxation slide (forest, river, clouds, ...)
   - The remaining slides should contain the photos of family members so that each slide contains only one family member.

- In total you should not have more than 15 or 20 slides.
- Try to create the order of slides in which family members are placed randomly and are not linked. While the slides are presented during the test, the examinee should not know what slide will come next.

4. Import your family slides according to 8.2.
5. Now the test is ready. If you want to take the test yourself, then have in mind that during the creation of slides your brain habituated to the selected slides and if you want to get as good results as possible, you should let some time (1 day, or at least several hours) pass before you start the test.
6. If you intend to test somebody else (some other family member), then you can start the testing immediately.
7. When the test is completed, the test results will appear on the screen. To review the results follow the instructions in 7.5.
8. After that, you can preview or print the report according to 7.6.

8.3.2. Friends and Other People

If you want to test your reaction to friends, acquaintances, politicians, actors, or anybody else, create the test the same way you created your family members test (8.3.1).

For each group of people you want to test, you can create different personal test which will be memorized in a different package. For PsyCom packages consult 6.

8.3.3. Occupational Orientation

In case that you want to take the new job, or want to engage yourself in any sport, you could test the emotional reaction of your brain to slides showing different professions or different sport activities.

8.3.4. Lie Detection

Lie detection procedure is useful if you want to test whether your friend or family member took part in a certain action. He/she denies that but is willing to take the PsyCom lie detection test **(IMPORTANT NOTE: This procedure can be done only for fun and educational purposes. Any person taking the test must consent to it while the privacy of all collected information during the testing will be your responsibility).**

Have in mind that lie detection in PsyCom SemiPro device is not professional lie detection device. PsyCom PSY351 Pro is specially created for these purposes, so please contact www.artmedico.com for professional lie detection machines.

Also have in mind that lie detection performed on professional machines, by experts, is not admissible to the court and that results of such investigation are not reliable and are largely speculative. Results obtained by PsyCom are even less reliable. For this reason you must not take these results for granted and can use this procedure only for fun or personal education.

In lie detection you should have in mind the following general concept:

1. The person who committed certain action has the memory of that action + knowledge that the action was a kind of wrongdoing, which is why the person's brain will produce the stressful reaction each time the information is presented to the examinee.
2. If you want to test whether your husband/wife secretly smokes while you are away, you will prepare a group of slides that will contain different small house items (e.g. scissors, spoon, DVD, etc.). Around 5 items of this kind will be enough. Since these items are not related to any incriminating action, they will help the examinee to relax. The last slide will be the photo of cigarettes (preferably the type used by your wife/husband/friend).
3. The first slide (1.jpg) is always the relaxation slide (river, forest, clouds, etc.).
4. If you find reaction on the last slide (cigarettes), this means that that the examinee reacted stressfully to the presented item and that potential reason for this is smoking in secret.
5. But there are many reasons for which one could react stressfully to the picture of cigarettes. The main reason could be his/her knowledge of what he/she is tested for. Knowing that one is tested for secret smoking would definitely provoke reaction on slide with cigarettes. So, take the results only for fun purposes.
6. You can use the same principle for testing different things from your everyday life.

8.4. Interpretation of Test Results

PsyCom will evaluate the reaction to any slide in a print report. Global reactions are described by cats in different postures (7.5). Many parameters from the report indicate the type of the reaction. Consult the chapter 7.5.2 dealing with the report parameters and the interpretation of the results to understand the meaning of the report.

Generally speaking, slides next to which you find the bristled cat are those slides that provoked the strongest stressful reaction. These situations or persons most likely have a certain emotional meaning, you may have unresolved issues with them, or you may be emotionally charged to them.

If you repeat the same test several times, you may have different results, but if on some of the slides you constantly have the reaction, that means that the situation, or person presented by the slide, is the source of significant stress for you. Repeated stress could be harmful for your body which is why you should try to solve the problem associated with that slide. To do so, you may try the relevant therapy provided by PsyCom.

9. PsyCom Therapies

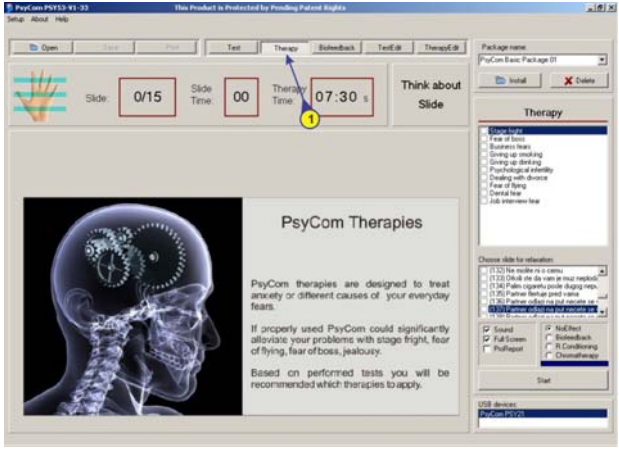
Slide:
0/15
Slide Time:
00
Therapy Time:
07:30 s
Think about Slide
Therapy
PsyCom Therapies
PsyCom therapies are designed to treat anxiety or different causes of your everyday fears.
If properly used PsyCom could significantly alloviate your problems with stage fright, fear of flying, fear of boss, jealousy.
Based on performed tests you will be recommended which therapies to apply.
Start

Figure 38. PsyCom therapies

Therapy module (1) allows the user to take part in different therapeutic methods based on behavioral treatment approaches such as habituation,

systematic desensitization, reaction conditioning, biofeedback and chromatherapy. PsyCom therapies are essentially very similar to PsyCom tests, but therapies will allow you to use some of the mentioned therapy modes to train your brain to react will less intensity.

Before you start the therapy, you should take comfortable position and hold the PsyCom probe in the hand. Once the therapy is started, you should try to concentrate and imagine the situation suggested by the slide as realistically as possible. The better the imagination, the better the results will be.

PsyCom therapies are designed for different types of psychological training. The therapies provided in PsyCom Basic Package v1-1 can be used to learn and test basic principles of PsyCom therapy procedures. Using these common therapies you can try procedures of Reaction Conditioning, Biofeedback or Chromatherapy.

Once that you learn how to use these therapies and choose what types of brain training you would like to try, just visit www.artmedico.com and download any of available therapies.

Generally speaking, most of PsyCom therapies can be practiced 3-5 times with 20-30 min. pause. Meaning that during 1h, you can complete one PsyCom therapy for 3 times, what should be sufficient for your daily practice.

Have in mind, that during the therapy many of the slides presented to you will not be those that provoke a reaction and are not stressful to you. Nevertheless these slides are necessary because it would not be beneficial for you to think about stressful slides all the time.

9.1. Therapy Module Description

Therapy module can be activated by pressing the button Therapy (1) from the module selection panel. What you can see on the screen in this module includes:

- List of available therapies (2) in the current package.
- Therapy parameters selection panel (3).
- Therapy mode selection panel (4)
- Start/Stop button (5) used to activate or stop the therapy.
- Therapy monitor displaying information on current slide number (6), total number of slides (7) in the therapy, duration of the current slide (8) and duration of the whole therapy (9).
- Instruction panel (10) contains the instructions on what the user should do at any given moment. By mouse clicking on this panel you can switch to Smiley panel that you may use for a biofeedback supported therapy.
- Picture panel (11) displays the description picture when the therapy is selected. This picture shortly describes the therapy.

Once that you start the therapy, using the Start button (5), slides will also be displayed in this panel.

After the therapy completion and display of the therapy results, you can either save or print the results of the therapy using the buttons in file management panel (12).

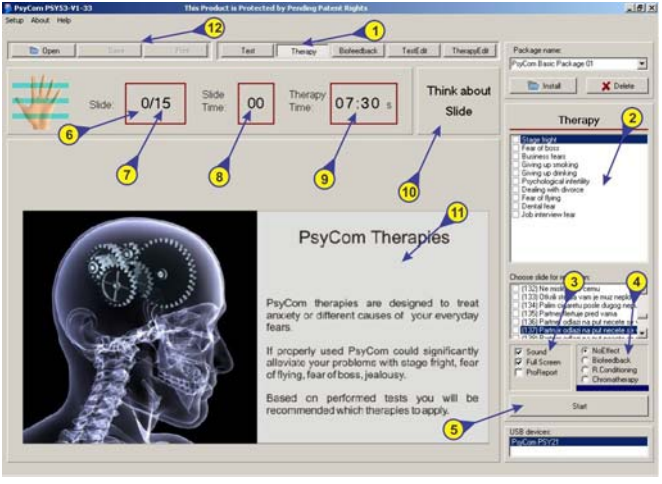

Figure 39. Therapy module

9.2. Choosing the Therapy

Therapy list (1) contains the names of all available therapies in the current package. On selection of any therapy, description picture (2) will shortly explain the therapy. If you choose to take the selected therapy, place yourself in a comfortable position and press the Start button (3).

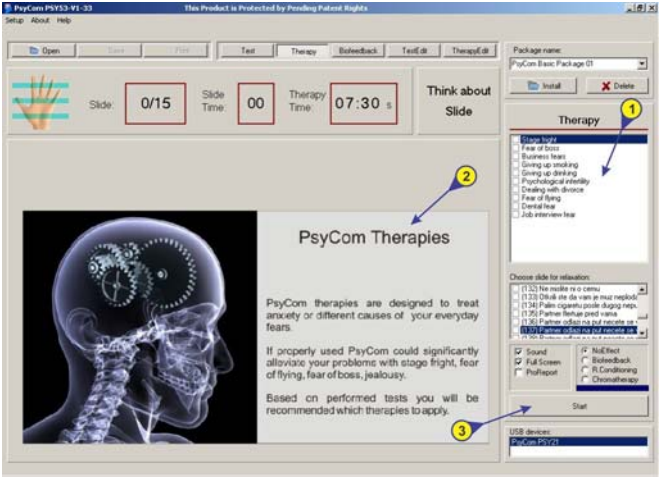
Slide: 0/15
Slide Time: 00
Therapy Time: 07:30 s
Think about Slide
Therapy
PsyCom Therapies
PsyCom therapies are designed to treat anxiety or different causes of your everyday fears.
If properly used PsyCom could significantly alleviate your problems with stage fright, fear of flying, fear of boss, jealousy.
Based on performed tests you will be recommended which therapies to apply.
Start
1
2
3

Figure 40. Choosing the therapy

9.3. Selection of Therapy Parameters

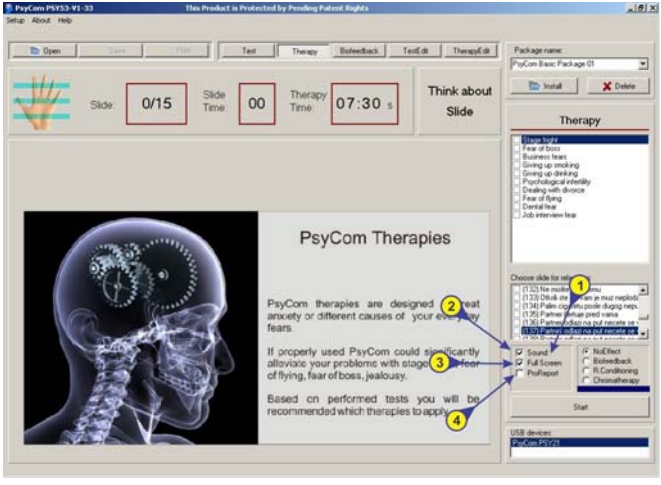

Figure 41. Selection of therapy parameters

Therapy parameters selection panel (1) allows you to:

1. Switch on/off the sound (2). Some of the slides have sound effects which may be necessary for therapy to function normally. If, for any reason, you wish to disable the sound, you can do so by unchecking this checkbox.

2. Choose to display the therapy slides on full screen (3). If this checkbox is checked, during the therapy slides will be displayed on the full screen.

9.4. Therapy Mode Selection

Therapy mode selection panel (1) allows you to change the mode of therapy in the following way:

1. No Effect – means that therapy will be performed on pure habituation bases.
2. Biofeedback – means that the therapy will be supported by biofeedback. Smiley panel (2) will appear and the slide background will take the color corresponding to your current psychological trend. Red for excitement and green for relaxation.
3. R.Conditioning – or reaction conditioning means that during the slide presentation, PsyCom monitors your stress level, and on excitement replaces the current slide, which led to excitement, with the relaxation slide. You can choose the relaxation slide in the relaxation slide list (3). During the relaxation slide, the user begins to relax and, as soon as PsyCom detects the trend of relaxation, it brings the previous (stressful) slide back.

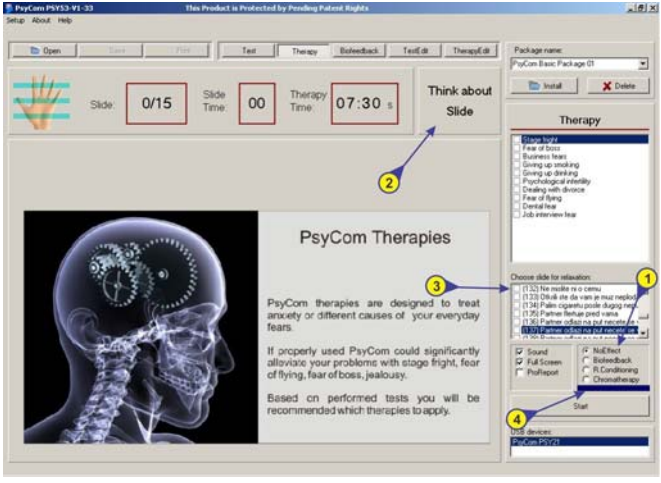

Figure 42. Therapy module selection

4. Chromatherapy – is a form of therapy suggesting that different colors produce different effects on the observer. Blue would have relaxing effect, while red would have exciting effect. If this checkbox is checked, the background of the slide would be in color specified by the color selector (4). By clicking on the color selector, you can change the chromatherapy color.

9.5. Starting the Therapy

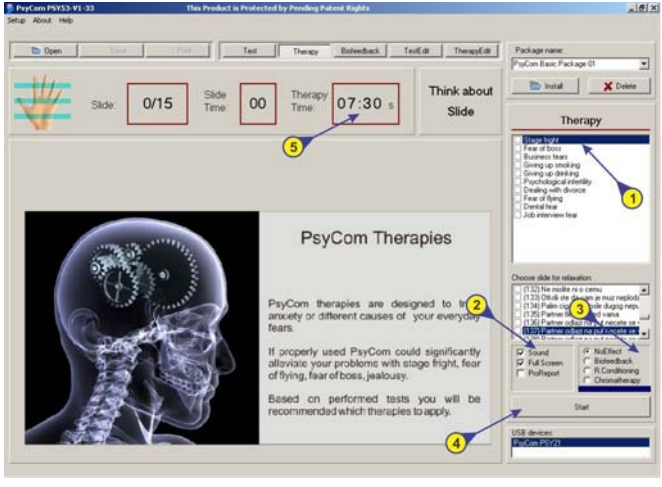

Figure 43. Starting the therapy

When you choose the therapy (1), select all the therapy parameters (2) and a therapy mode (3). Then you can start the therapy procedure by pressing the Start button (4). At any given moment during the therapy, you can press the same button again to stop the therapy.

During the therapy you should try to concentrate on slides and imagine situations presented by slides as realistically as possible. In the beginning you should note the total therapy duration (5) and be prepared to concentrate during the specified amount time.

Before you start the PsyCom therapy you should do the following:

1. Take the comfortable position in your chair.
2. In the Therapy Module (Figure 43), choose the therapy (1)
3. Note the total therapy duration (5) and be prepared to stay concentrated during the specified amount of time. PsyCom therapies usually last for about 2-5 min.
4. Set the therapy mode (3).
5. Take the PsyCom probe in your hand.
6. When you are ready, press the START button (4, Figure 43).
7. During the therapy, you should not make any moves with your hands, arms, legs, head, or any other part of your body. You shouldn't talk or laugh. Muscle moves could alter the PsyCom results.

9.6. Therapy Results

Once the therapy is completed, the results will be displayed. Therapy results are used to trace the progress in therapy. They will reveal if, during the therapy, your stress level decreases or not.

Therapy results include:

1. Therapy report (1, Figure 45) with interpretation of therapy results. **To zoom the therapy report** click the left mouse button on the picture (1) with report. **To zoom out**, click the left mouse button over the picture again.
2. **Switching between slides.** Data chart (5, Figure 45) is divided with vertical green lines that show the beginning and end of each slide. Whenever you click with left mouse button on any of the chart divisions, the corresponding slide will be displayed (6), while test results (2, 3, 4) will change their values according to the selected slide.
3. If you hold the right mouse button and move the mouse over the chart area (5), you can **scroll the chart**.
4. To **zoom in** the chart, hold the left mouse button at the upper left corner and drag the mouse to the lower right corner of the window you want to zoom.
5. To **zoom out** the chart, hold the left mouse button at the lower right corner and drag the mouse to the upper left corner.
6. If you want to **preview all results**, refer to heading Print Preview 9.8.

9.6.1. Interpretation of the Results

The overall evaluation of each slide (6) is presented with the cat (4). Cats have the following meaning:

1. X (0) means that the slide is not evaluated. This situation happens when the software is not able to estimate the stress grade, mainly in case that the reaction started before the moment the slide is displayed or in case that the amplitude of the reaction is too small.
2. Cat 1 (1) stress grade means that during the slide, complete relaxation was detected.
3. Cat 2 (2) stress grade means that during the slide user was mainly relaxed with only minor excitement characteristics.
4. Cat 3 (3) stress grade represents medium level of excitement – or normal state.
5. Cat 4 (4) stress grade means that the examinee demonstrated a stressful response during the slide.
6. Cat 5 (5) stress grade represents high level of stress during the slide.

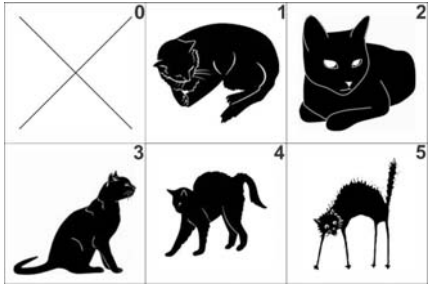

Figure 44. Cat stress grades

Using the cat stress grades you can clearly see what topics excite you and what topics relax you.

Besides the therapy interpretation (1) and cat stress grades (4), each of the slides is accompanied with the number of parameters (2,3) that describe the physiological responses more closely.

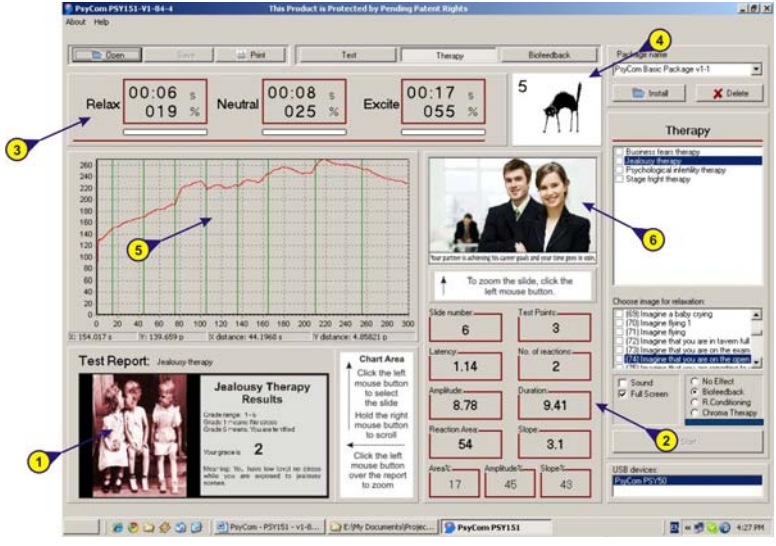

Figure 45. Therapy report

Therapy results include:

- Latency — Represents the time elapsed from the onset of slide to the first recorded reaction. In certain cases software can report negative latency which means that the reaction started before the slide is displayed. In that case, negative latency represents the time of the reaction start before the onset of the slide.
- No. of Reactions — Shows the number of different reactions that took part during the slide. This number implies the number of thoughts that elicited the stressful reaction.
- Amplitude — Shows the amplitude of the first reaction that follows the onset of the slide.
- Duration — Shows the duration of the first reaction that follows the onset of the slide.
- Reaction Area — Represents the reaction area of the graph. This parameter correlates to

	both the amplitude and duration of the first reaction.
• Slope	Shows the gradient of the stress line. The higher this value the steeper the onset of the stressful reaction.
• Area%	Shows percentage of the 1st reaction area comparing to the largest reaction area in all slides.
• Amplitude%	Shows percentage of the 1st reaction amplitude comparing to the highest reaction amplitude in all slides.
• Slope%	Shows percentage of the 1st reaction slope comparing to the steepest reaction slope in all slides.
• Relax time	Relax time (3) shows the time the examinee spent in relaxation during the presentation of the selected slide. Relaxation time is expressed in seconds and as percentage of the Relax time comparing to the slide duration
• Neutral time	Neutral time (3) shows the time the examinee spent in neutral trend during the presentation of the selected slide. Neutral time is expressed in seconds

	and as percentage of the Neutral time comparing the slide duration.
• Excite time	Excite time (3) shows the time the examinee spent in excitement trend during the presentation of the selected slide. Excite time is expressed in seconds and as percentage of the Excite time comparing the slide duration.

9.6.2. Interpretation of Therapy Results

Therapy results are used to trace the progress you make in the chosen therapy. To properly interpret the therapy results, you must have in mind the following:

1. PsyCom records the EDA activity which is directly correlated to your level of psychological arousal and stress. This activity is measured by standard polygraphs used by police during the crime investigation. PsyCom shows the level of stress you experience during different slides. Based on this activity, PsyCom evaluates different psychological characteristics.
2. The therapy result is related to your current psychological state. Have in mind that emotional brain is not as consistent as the cognitive brain. At different times you can be in different mood which will strongly affect your emotional reactions. You can be

sleepy, nervous, alert, absent, and depending on your mood, your brain will react differently to the same stimulus (slide), just as your brain will react emotionally different in different occasions. If you are in love with a person X, it is not every time that your brain will react emotionally the same. Your reactions to the person you love will be significantly different after not seeing him/her for a long time, before and after sexual intercourse, in the morning and in the evening, if you are sleepy and take any sedatives, or if you are nervous and angry. PsyCom will only show you the way you react to different slides at the moment of testing. It will not make any predictions on your average reactions. Knowing this, have in mind that we can clearly conclude that the level of our love is not the same for the same person at all times. It simply changes all the time.

3. When you see certain slide, you usually experience the process of habituation, meaning that your organism learns to react with less intensity to the content of the slide. If you see the same slide again after a short time, you most likely will not react to the slide, or your reaction will be much lower simply because your emotional brain went through a process of habituation.
4. If you note that certain slides, in repeatedly taken therapies, always or almost always produce stressful reaction (bristled cat), than be aware of the fact that the situations presented by these slides could be serious stress initiators in your life. These situations could be detrimental for your health.

9.7. Preview the Report

Once the results are displayed you can choose the preview them by pressing the Preview button (1). On pressing this button, print preview will be activated.

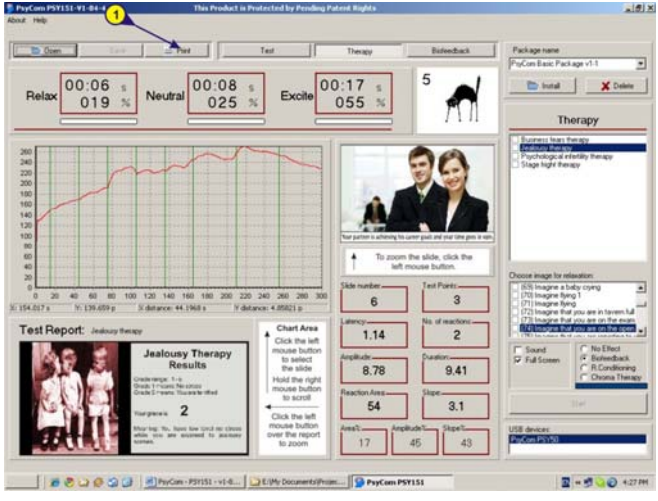

Figure 46. Therapy report

9.8. Print Preview

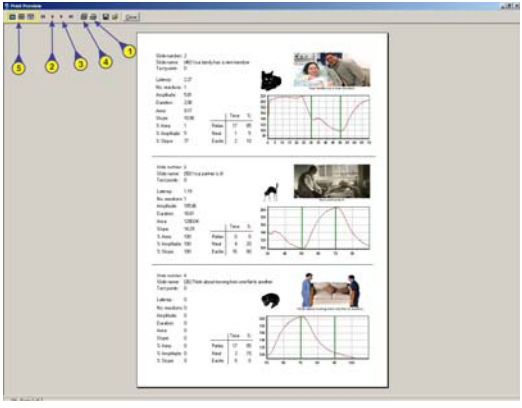

Figure 47. Therapy print preview

Note that print preview usually has several pages (not only one). To move between pages use the arrow buttons (2, 3, Figure 47).

- If you want to print the report press the print button (1).
- If you want to go to either next or previous page, press the buttons (2, 3).
- To setup the printer, press button (4). To zoom the report press one of three buttons (5).

9.9. Save the Therapy Results

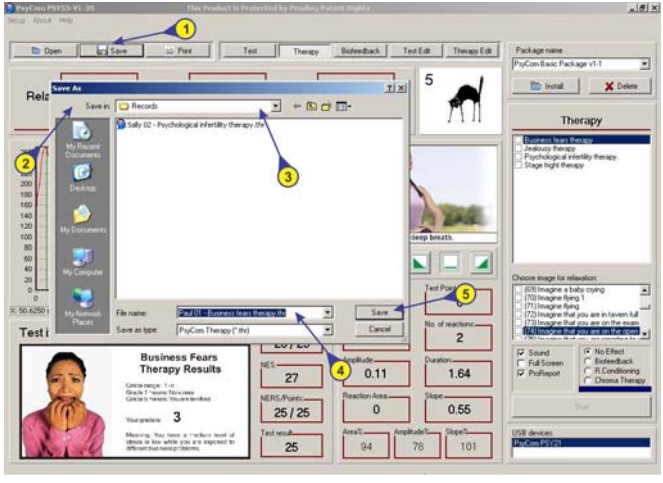

Figure 48. Saving the therapy results

When the therapy is completed and therapy results are on the screen, you may choose to save them. If, at this point, you switch to another program module, you will loose all therapy data. Before switching to another program module, you should first save the therapy results by pressing the Save button (1). You will be displayed the save dialog (2) which lets you

specify the folder (3) and file name (4) in which you want to save the therapy results. Default extension for therapy files is ".thr". After defining the folder and file name, press the Save button (5).

9.10. Open the Previously Saved Results

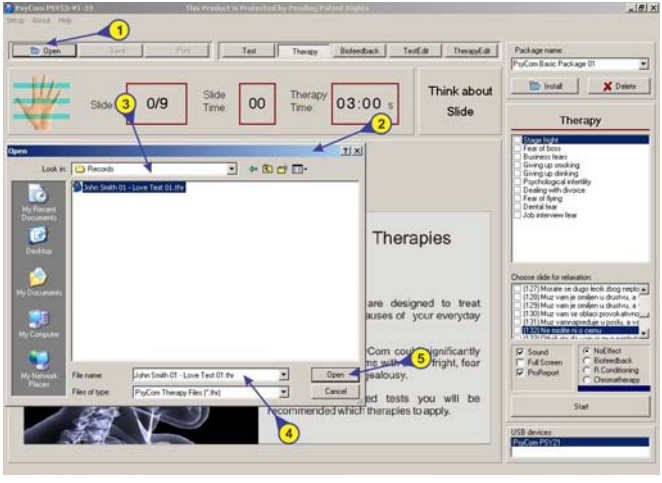

Figure 49. Open the therapy results

Previously saved therapy results can be opened by pressing the Open button (1). Open dialog (2) will be displayed allowing you to specify the folder (3) and therapy file name (4) from which to open the therapy results. After specifying the file, press the Open button (5).

10. Biofeedback

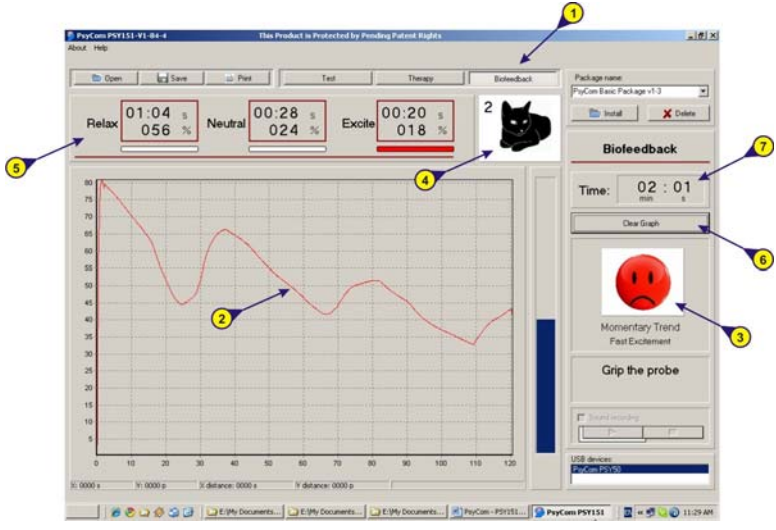

Figure 50. Biofeedback module

The only way to learn the technique of relaxation or mind control is to recognize the early, for a man imperceptible, signs of relaxation or excitement. These hidden signs of psychological reactions are not readily observable. In order for them to become visible, it is necessary to use a device capable to register them in early stage and present them on the screen. PsyCom biofeedback is designed specially for this purpose.

When you start the PsyCom software you will automatically be in Biofeedback module. If you are in some other module, you can activate the Biofeedback module by pressing the Biofeedback button (1, Figure 50). Biofeedback module appears on the screen and waits for you to hold the PsyCom probe.

As soon as you touch the probe, PsyCom shows the level of psychological activity (electrodermal activity – EDA) on the graph (2). Thinking of different topics will lead to change in your psychological activity and you will see the graph (2) rising or falling. PsyCom shows this change instantaneously. Rising of the graph means that your current thoughts excite you, while falling graph means that you are beginning to relax.

Software automatically makes analyses of your activity and estimates your momentary trend (3) and your global state (4). Momentary trend, presented with Smiley (3), shows whether you, at the current moment, are getting excited or relaxed. Global state (4), presented with the cat, shows whether you are globally excited or relaxed, based on a whole session analysis.

Have in mind that red Smiley means that you tend to excite, or that you are in a way to excite, and not that you are generally excited. The greener the Smiley is, the more you tend to relax. It may happen that you are very tensed and nervous, but that Smiley suddenly becomes green, which would indicate that you are currently in a way to relax yourself. This is exactly why biofeedback procedure is useful - to help you learn the techniques of relaxation.

Biofeedback monitor (5, Figure 50) displays the time you spent in relaxation, neutral state or excitement. Each time you start to excite, Smiley becomes red and red signal light turns on in biofeedback monitor (5). When you start the relaxation, Smiley becomes green and green signal light turns on. Yellow signal light turns on when you are in neutral trend. At that moment, Smiley is either light green or dark yellow. Each time any of the signal lights turns on, the corresponding timer starts ticking. Each timer measures the time you spend in either of the trends (relaxation, neutral, excitement). Timers display the time in minutes and seconds, but they also display the percentage of time you spent in relaxation, neutral or excitement trend comparing to the total session time (7).

If, during one session, you spend more time in relaxation comparing to excitement and neutral times, the software will conclude that you are globally more relaxed and the cat (4) will take the relaxing posture (1 or 2, Figure 51). If you are dominantly in neutral trend, cat takes neutral posture (3). In case you spend most of time in excitement, the cat will take angry

posture (4 or 5). Cat will always present your global state which is calculated during the whole session.

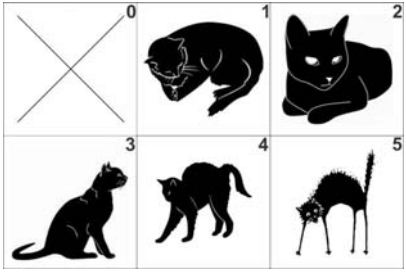

Figure 51. Global psychological state

If you want to start the new session, just clear the graph using the Clear Graph button (6, Figure 50).

10.1. Applying the Biofeedback Module

You can use biofeedback module to learn how to relax, to determine the sources of your stress, or you can use this module to record psychological activity of your friends and family while you talk with them on different topics.

10.1.1. Find out What is Relaxing for You

Before you grip the PsyCom probe, clear the biofeedback graph using the button (6, Figure 50).

To find out the best relaxing exercise, try different things watch TV, read the book, close your eyes and lie in your bed while thinking about relaxing topics such as sea, mountain, river, dear person. While doing these things, hold the PsyCom probe in your hand. Each time you start the new activity clear the previous session by pressing the Clear Graph button (6, Figure 50). The goal is to find activity with the greatest portion of relaxation time in the biofeedback monitor (5, Figure 50).

In other words, if you want to test how relaxing for you is to watch the TV, do the following:

1. Activate the Biofeedback module by pressing the button Biofeedback (1, Figure 50)
2. Clear the graph by pressing the button Clear Graph (6, Figure 50).
3. Place yourself in a comfortable position in front of your TV
4. Watch the TV while holding the PsyCom probe for a certain period (10 – 15 min.)
5. Release the PsyCom probe
6. Save the Biofeedback results (10.5).
7. Note the posture of the Cat and the results in Biofeedback monitor (5, Figure 50).

8. If the portion of relaxation time is greater than 70%, you can consider this activity relaxing for you. The greater the percentage of relaxation, the more relaxing the exercise is for you.

After completing the TV exercise, you may try different activities and see which is the most relaxing for you.

Have in mind that the more time you spend in relaxation, all body systems, relaying on the activity of the sympathetic nervous system, will also relax. This means that your heart rate and blood pressure will most likely decrease during these relaxation sessions.

10.1.2. Determine the Sources of Stress

Clear the graph by pressing the Clear Graph button (6, Figure 50). Hold the PsyCom probe and wait until Smiley becomes green (graph decreases). At this point, try thinking of a stressful topic (work, boss, marriage, school, ...). If your though is stressful, the graph will rise instantaneously and Smiley will turn.

Have in mind that the first time you think of a stressful topic, you will have the most intense reaction. If you think again about the same thing, you will usually react with lesser intensity because you brain habituates itself to the stressful topic. In case that, after repeating the same stressful thought several times, you still have intense EDA reaction, this will clearly indicate

that such thought is the significant source of stress in your life. After several exposures the same thought, reaction usually disappears, unless such though is a serious stress initiator.

10.1.3. Check your reaction to Anger, Insulting and Shouting

Clear the graph (6, Figure 50), hold your PsyCom probe and wait until graph flattens or starts falling. Ask your friend to pretend he/she is angry with you, to start shouting and insulting you at the moment your biofeedback graph starts to fall and you are in relaxation trend.. Watch the reaction on PsyCom. Even though you are aware that this is only the game and training, your psychological activity will rise. This kind of situation

Biofeedback monitor (5) will tell you the portion of time you spent in excitement/neutral/relaxation trend while being exposed to shouting.

Repeat this procedure and try to remain as calm as possible while your friend insults you. Try different things:

- Try to think of something relaxing while your friend pretends to be angry.
- Try to ridicule your friend in your mind, or imagine him/her in a funny scene.
- Try to find the grammatical errors or verbal inconsistencies while he/she speaks.

Exercise these scenes while holding the PsyCom probe in your hand and you will see effects of your training.

10.1.4. Stress release

PsyCom can help you to get stress relief through the process of habituation. Through this process, the brain learns to react with less intensity to the same repeated stressful thought. So, if you find certain topics that constantly initiate stressful reaction, then you can try to get rid of such stress by habituating your brain to the stressful thought.

You may have different stressful thoughts that range from different persons such as friends or family members to different life situations such as meeting with boss, job interview, fear of public performance, fear of insects, etc.

This process of stress release using the method of habituation works the following way.

Clear the graph by pressing the Clear Graph button (6, Figure 50). Grip the probe and wait for a while until graph starts to decrease (Smiley is green). At that moment, think about the stressful topic. Graph rises for a while, but as you go on thinking about the same problem, the rate of rising decreases. The more you think about the topic, you will excite less. The more you repeat this procedure, the less stressful the topic will be. Training should be performed as often as possible (30 min. or more, every day).

10.1.5. Biofeedback Module as Evaluation Tool

In case that you use the Biofeedback module to test your friends or family on PsyCom, then during the conversation, the examinee should hold the PsyCom probe, while you can ask different questions from his/her life. The level of activity rises and falls depending on the conversation topic. Topics that are irritating for the examinee lead to rise in activity, while relaxing topics tend to decrease the activity.

Have in mind that you should ask the question when examinee is in relaxation trend – that is when the graph is falling down and Smiley is green. If you ask the question when the examinee is in excitation trend, you will not know whether the examinee excited because of you question, or because he had already been in excitation trend before you asked the question.

By looking at the graph during the interview, you will be capable to see whether certain conversation topics excited or relaxed he examinee.

10.2. Sound Recording

PsyCom supports simultaneous sound and psychological activity recording. Audio recording is possible only if PC is equipped with the sound card and microphone and if all sound settings are properly adjusted.

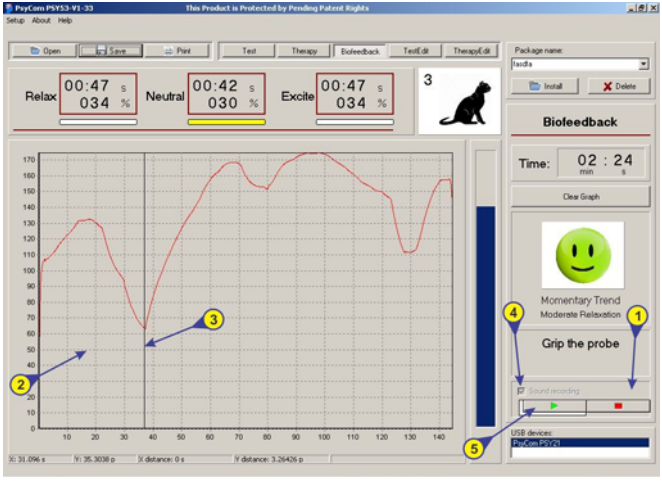

Figure 52. Sound recording

You can use this function to find out what triggers your psychological reaction. If, for instance, you imagine different things, you can speak in a microphone what you are thinking about. You can also try to watch TV with sound recording activated. Afterwards, when you examine the record, you can play back the sound to hear what triggered the reaction. If you want to record the TV sound, you must either have a proper microphone, or use a common PC microphone but placed close to your TV speakers.

This function allows you to play back the sound at positions with significant alteration of psychological activity. By playing back the audio record from these specific positions, it is possible to find out which topics of conversation led to alteration of psychological activity. Playing back the sound from specific positions can be initiated by double clicking the left mouse button at position of interest on the graph (2). As soon as the play back is activated, black vertical line (3) appears on the graph showing the exact position of the recorded sound. By playing back the sound from this location it is possible to conclude what triggered the psychological response.

Audio recording takes part only if Sound recording check box (4) is checked. It can be checked only before the session begins. After beginning of the session, sound recording cannot be activated. Sound control (5) contains two buttons which are made available when the probe is released. One of the buttons is Play button (5) used to play back the sound, while the other is the Stop button (1) used to stop the play back.

10.3. Preview the Report

To print the biofeedback report, press the Print button (1). On pressing this button, print preview will be activated.

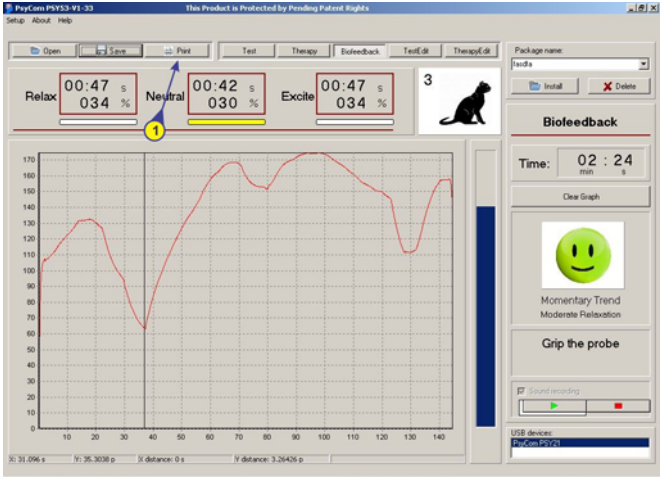

Figure 53. Biofeedback results

10.4. Print Preview

- If you want to print the report press the printer button (1).
- If you want to go to either next or previous page, press the buttons (2, 3).

- To setup the printer, press button (4). To zoom the report press one of three buttons (5).

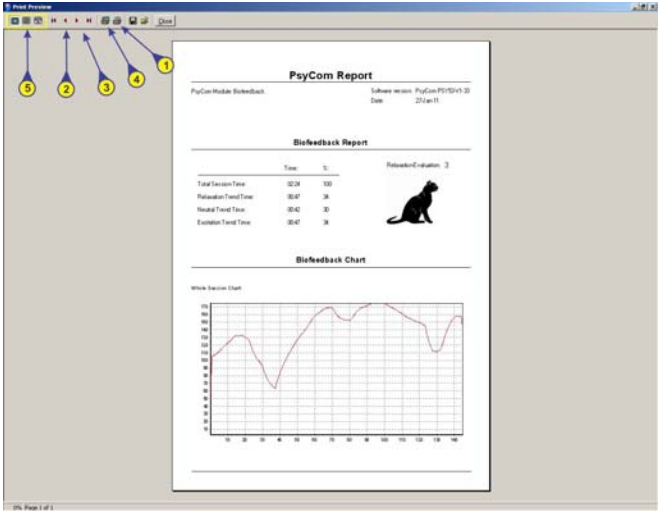

Figure 54. Biofeedback print preview

10.5. Save the Biofeedback Results

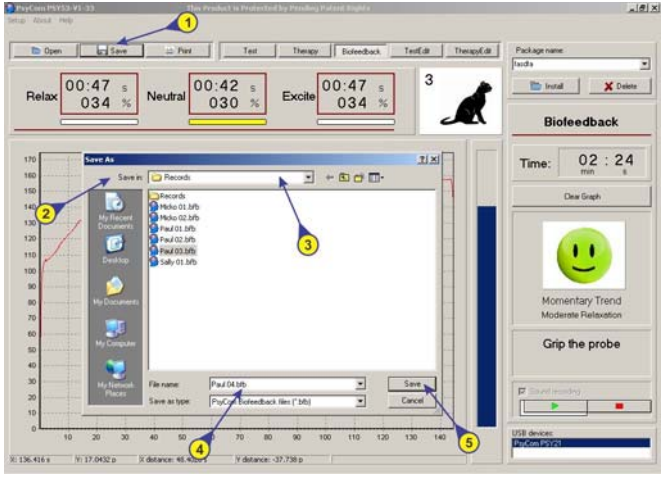

Figure 55. Save the biofeedback results

After completion of biofeedback procedure you may choose to save the biofeedback results. If, at this point, you switch to another program module, you will loose all biofeedback data. Before switching to another program module, you should first save the biofeedback results by pressing the Save button (1). You will be displayed the save dialog (2) which lets

you specify the folder (3) and file name (4) in which you want to save the therapy results. Default extension for biofeedback files is ".bfb". After defining the folder and file name, press the Save button (5).

10.6. Open the Biofeedback Results

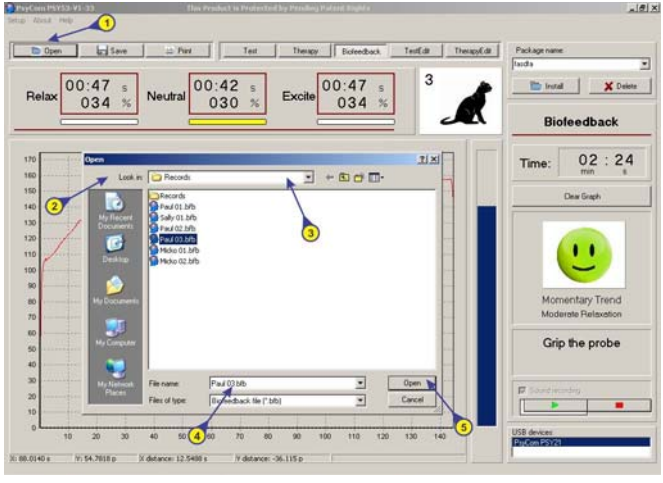

Figure 56. Open the biofeedback results

Previously saved biofeedback results can be opened by pressing the Open button (1). Open dialog (2) will be displayed allowing you to specify the folder (3) and biofeedback file name (4) from which to open the biofeedback results. After specifying the file, press the Open button (5).

11. Troubleshooting

11.1. Test If PsyCom Works OK

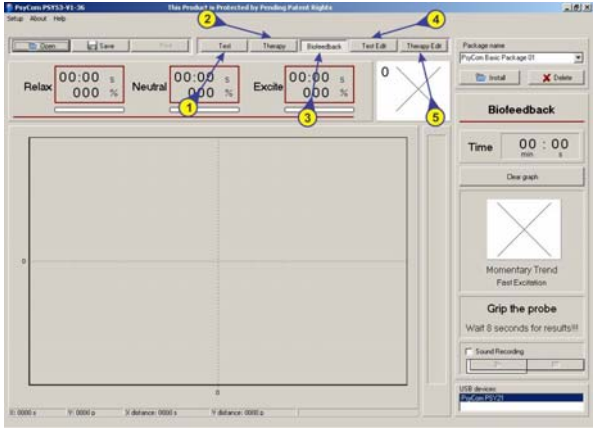

Figure 57. Biofeedback module

1. If you are not in Biofeedback module already, press the Biofeedback button (3, Figure 57).
2. Grip the PsyCom probe.
3. As soon as you touch the probe, the EDA graph should immediately be drawn on the chart (Figure 58).

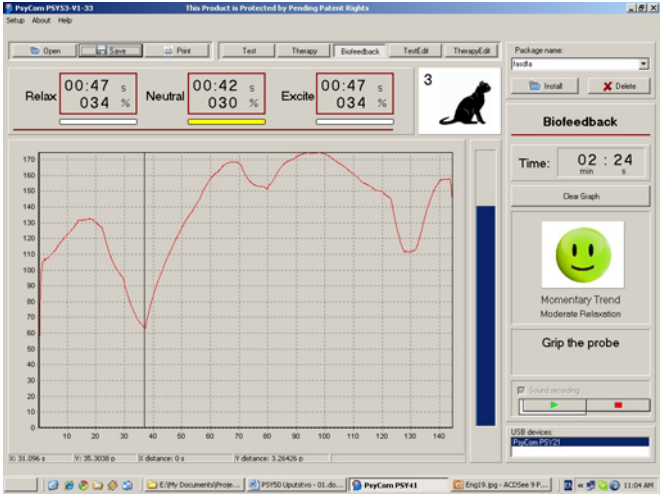

Figure 58. EDA activity in Biofeedback mode

4. Try to relax for a while and the graph should start going down (Smiley becomes green – You are getting relaxed).
5. If you start to breed deeply, or if you stand up, or start any other physical activity, graph should go up (Smiley becomes red – you are getting excited)

11.2. PsyCom Probe is not Connected

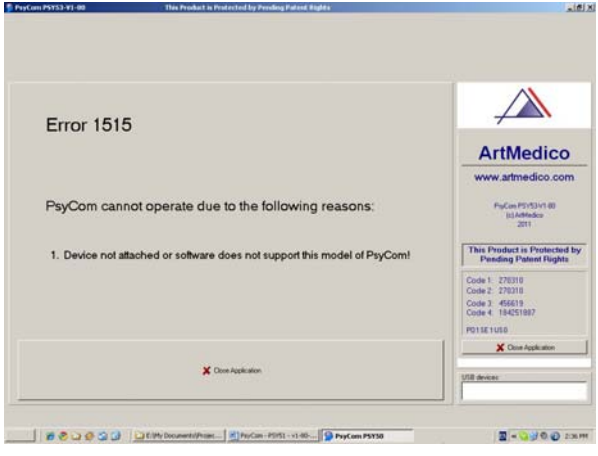
Error 1515
PsyCom cannot operate due to the following reasons:
1. Device not attached or software does not support this model of PsyCom!
Close Application
ArtMedico
www.artmedico.com
This Product is Protected by Pending Patent Rights
Close Application
USB devices:

Figure 59.PsyCom probe is not connected

This message means that either PsyCom probe is not connected to your PC, or that your PsyCom software does not support the PsyCom probe connected to your PC.

1. Check if the USB connector of your PsyCom probe is properly inserted in your PC.
2. Try to reset the PC.

11.3. PsyCom Probe and PsyCom Software do not Match

This message appears if the software you are trying to use is not distributed along with your PsyCom probe. PsyCom uses the software that is generated exclusively for one probe with a certain serial number. If the serial numbers of PsyCom software and PsyCom probe do not mach, this message will appear.

1. Disconnect the probe, wait for 2 min. and connect it again.
2. Try to reset your PC.

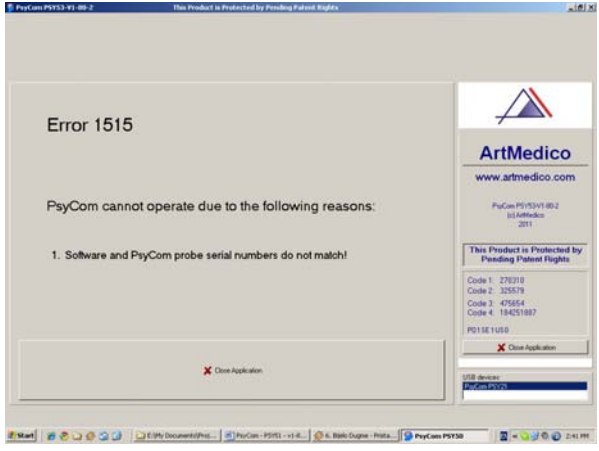
Error 1515
PsyCom cannot operate due to the following reasons:
1. Software and PsyCom probe serial numbers do not match!
Close Application
ArtMedico
www.artmedico.com
This Product is Protected by Pending Patent Rights
Close Application

Figure 60.PsyCom probe and PsyCom software do not match

11.4. EDA value too high. Clean your hands!

This message appears if your hands become too wet to use PsyCom properly. In that case the EDA value will become too high, and the functioning of PsyCom will become unreliable. If this message appears, you should take some rest (30 min. at least) and carefully wash your hands and then dry them completely.

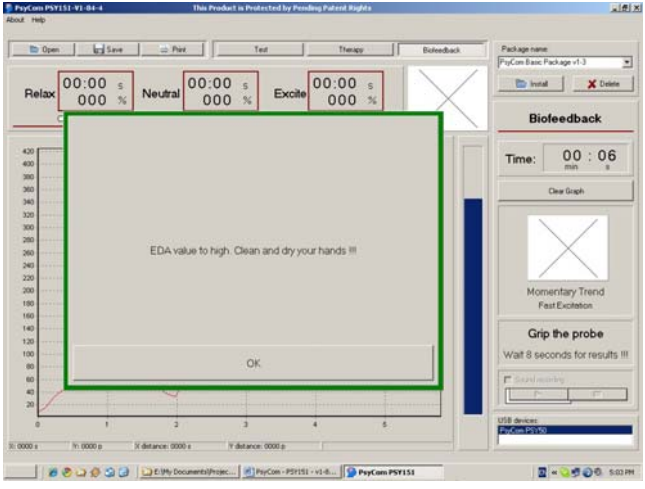

Figure 61. EDA value too high. Clean and dry your hands.

12. Warning

1. PsyCom device must not be used by people with pace-maker or any other implanted or external device. The user of PsyCom must not be connected to any other device, such as ECG, EEG, EP, electric stimulator, detoxicator, or any other electric device.
2. PsyCom probe should be cleaned once a month with wet cloth. For cleaning you should use either alcohol or water. You must not submerge the probe into water or other liquid.
3. If any form of allergic reaction or unpleasant sensation occurs during the recording, you should immediately release the probe, stop the session and look for physician's assistance.
4. PsyCom probe must not be touched with, or connected to any kind of conductor, any kind of voltage, or any kind of electric device. PsyCom probe is allowed to get in contact only with the skin of the user.
5. PsyCom device is equipped with only one USB connector used only for connection to the USB port of your personal computer. You must not connect PsyCom to any other device.
6. PC to which the PsyCom is connected must be equipped with at least Intel or AMD on 1.6GHz/1GB RAM and 500MB of free disk

space. PsyCom operates on Windows XP or newer operating systems.

7. PC computer connected with PsyCom must comply with all required standards (safety, EMC, ...).
8. After saving any test or therapy results or after making changes to any packages, tests or therapies you should immediately backup all your relevant files. ArtMedico is not responsible for any loss of data that may occur for any reason.
9. PsyCom PSY151 is not connected to Internet in any way. PsyCom, therefore, cannot transfer, over the Internet any data taken from you.
10. PsyCom software allows you to save your psychological activity, psychological tests, therapies and biofeedback sessions. You will be responsible for the security of these files or potential dissemination of your personal information..
11. Any of the PsyCom procedures such as testing or therapy can be done only for fun and educational purposes. Any person taking the test must consent to it while the privacy of all collected information during the testing will be your responsibility.
12. Lie detection performed on professional machines, by experts, is not easily admissible to the court while the results of such investigation are not reliable and are largely speculative. Results obtained by PsyCom PSY151 are even less reliable. For this reason you must not take any PsyCom results for granted and can use these procedures only for fun or personal education.

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PsyCom

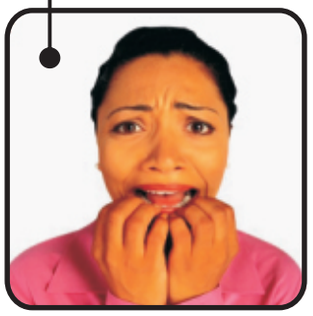
Psychological Testing & Therapy Home Unit

PsyCom supports psychological testing+therapy and standard, EDA based, biofeedback.

Tests

- Are you happy with your appearance
- Are you ready for marriage
- Business fears
- General test
- Jealousy + envy test
- Love test
- Sports test
- Stage fright test

+ Relaxation therapies



Business induced stress is the cause of many ailments, anxiety, immune failure and other health problems. This test evaluates the level of stress you experience during the business related scenes.

You can download additional tests/therapies on our web site

ArtMedico
www.artmedico.com

Contents:

- PsyCom probe
- Quick start guide
- User's manual
- Installation CD

Hardware requirements:

- CPU 1.6 GHz
- 1 GB RAM
- 500 MB HDD

USB B

RoHS

CE

8 607000 046704

Designed for Microsoft® Windows® XP

Compatible with Windows® 7